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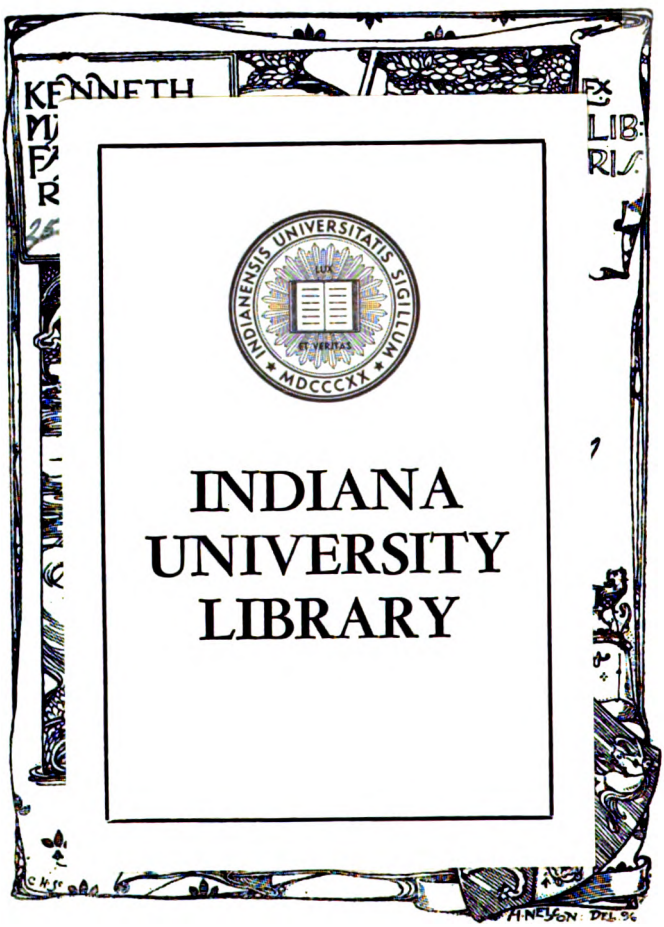

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FROM 1900 ONWARD

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FROM 1900 ONWARD

by

ADMIRAL SIR REGINALD BACON
K.C.B., K.C.V.O., D.S.O.

Foreword by
SIR ARCHIBALD HURD
and
An Introduction to the War Chapters
by
ADMIRAL SIR E. R. G. R. EVANS
K.C.B., D.S.O.

With 28 *Illustrations*
and
2 *Wood Blocks*

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Contents

		PAGE
	PREFACE	5
	FOREWORD	11
	INTRODUCTION	15

PART I

PRE-WAR

CHAPTER		
I.	'EMPRESS OF INDIA'—PARIS 1900 EXHIBITION—WAR COURSE, 1900	21
II.	LORD WOLSELEY'S MISSION	36
III.	'SUBMARINE BOATS'	50
IV.	NAVAL OFFICERS AND NAVAL EDUCATION	79
V.	THE DESIGN OF H.M.S. 'DREADNOUGHT'	91
VI.	REFORMS	104
VII.	H.M.S. 'IRRESISTIBLE'	121
VIII.	H.M.S. 'DREADNOUGHT'	148
IX.	DIRECTOR OF NAVAL ORDNANCE	161
X.	COVENTRY ORDNANCE WORKS	183
XI.	JAPAN	206

PART II

WAR WORK AND AFTER

	INTRODUCTION TO PART II BY ADMIRAL SIR E. R. G. R. EVANS, K.C.B., D.S.O.	233
XII.	DOVER	235
XIII.	DOVER (*continued*)	264
XIV.	THE MINISTRY OF MUNITIONS	297

Digitized by Google

CHAPTER		PAGE
XV.	PERSONALITIES	317
XVI.	THE LAST TWENTY-ONE YEARS	349
	POSTSCRIPT	375
	APPENDIX I	377
	APPENDIX II	377
	APPENDIX III	381
	APPENDIX IV	384
	INDEX	387

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List of Illustrations

	FACING PAGE
H.M.S. 'Empress of India'	22
Field-Marshal Viscount Wolseley, K.P.	36
Queen Draga of Servia	38
King Alexander of Servia	38
Queen Elisabeth of Roumania	40
A Musical 'At Home' in Queen Elisabeth's Studio in the Palace at Bucharest	42
Akmed Pasha, A.D.C. to the Sultan of Turkey	46
No. 1 Holland Submarine	52
H.M. Submarine B 4	64
Admiral of the Fleet Lord Fisher, O.M., G.C.B., G.C.V.O.	92
H.M.S. 'Dreadnought'	102
H.M.S. 'Irresistible'	150
15-inch Howitzer in Action	200
Admiral Sir E. R. G. R. Evans, K.C.B., D.S.O.	232
Admiral Humphrey Bowring, C.B.	244
Dover Straits at Night-time	250
A Drifter and Mine-sweeping Trawler	256
Smoke-screens	268
Result of the Bombardment of the Dockyard at Ostend	276
Result of the Bombardment of the Tirpitz Battery	280
King Albert of the Belgians	318
Queen Elisabeth of the Belgians	320
The Rt. Honble. Winston Churchill, C.H., M.P.	322
Admiral of the Fleet Earl Jellicoe, O.M., G.C.B., G.C.V.O.	334
Admiral Ronarc'h	342
Admiral of the Fleet Sir Arthur Wilson, V.C., O.M., G.C.B., G.C.V.O.	344

Wood Blocks

	PAGE
Pen and Ink Sketch by Commendatore de Martino	119
Proposed Method of Blocking Ostend	399

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Foreword

IT IS NEARLY FORTY YEARS SINCE I FIRST MET ADMIRAL Sir Reginald Bacon, then one of the youngest captains in the Royal Navy. After years of hesitation as to whether this country needed submarines, the Board of Admiralty had recently taken the plunge. To the junior captain, already known for his scientific turn of mind, sound judgment, and administrative ability, was entrusted the difficult task of organizing the new submarine department. This entailed not only the supervision of the five boats which were being built to the design bought from an American company, but also of a series which embodied improvements which the young captain had evolved from a study of the American craft. He took charge of each one for the official trials as she or it was completed—for it is a moot point whether a vessel which can travel under the water and launch a devastating and treacherous torpedo should, in courtesy, be classed as a female like other men-of-war. A casual visitor like myself would certainly not have recognized the significance of any secrets, or if able to do so would not have made any improper use of them. Curiosity—the desire to see 'the wheels go round'—led me to ask Captain Bacon if I might go on board one of these submarines. He firmly but politely refused to let me do so.

Later on he was placed in command of the first 'Dreadnought' battleship. It was a ship of wonder, which owing to its revolutionary design postponed the Great War for seven years, since it forced the Germans to widen and deepen the Kiel Canal, and thus Lord Fisher, who had become First Sea Lord, gained time to reform the Royal Navy. When H.M.S. *Dreadnought* was commissioned, King Edward VII decided, at the suggestion of Fisher, very proud of the all-big-gun ship of his fertile imagination, to inspect her. So she left Portsmouth to cruise in and about the neighbouring waters. I was privileged to be on board

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on that occasion and shared in all the interest which this new type of ship was exciting throughout the world. The only person on board who was not excited was Captain Reginald Bacon, who declined to exhibit her wonders. I came away from the *Dreadnought* satisfied that her captain was the last man to act as showman.

Later, in the early days of the Great War, I met him when he was in command of the Dover Patrol, holding against the enemy, with increasing success from month to month, the southern exit from the North Sea. His friend Jellicoe, who had shaped the Grand Fleet into the finest instrument of naval warfare that had ever been known, commanded the northern waters, with the Tenth Cruiser Squadron, under Rear-Admiral Sir Dudley de Chair, far flung into Arctic regions, and Commodore Sir Reginald Tyrwhitt operating his cruisers, destroyers, and submarines from the base at Harwich.

Vice-Admiral Sir Reginald Bacon—for by that time he had reached senior flag rank and had been made a K.C.B. for his services—had organized with masterly ingenuity a unique type of blockade. It was decided by authority that it would establish public confidence if something were known of the manner in which the vital gateway was being held. Sir Reginald made no secret of the fact that he was not sympathetic to publicity. Public confidence should, he claimed, be based on results; day by day, liners and other merchant ships, defenceless against any attack which might have been made on them, were passed through the Narrows with troops, munitions, and stores, and they were reaching the shores of France in safety; not a life was lost, though upwards of five thousand vessels, not counting hospital ships, were shepherded from shore to shore in face of the enemy. That record, in his view, should have been sufficient for the nation and, in any event, the force at this admiral's command was so weak that the less that was said about the Dover Patrol in the newspapers the better, since the Germans did not realize that the defence was in some measure mere bluff. One officer who served at Dover has stated that 'if the Germans had realized our weakness and the enormous traffic which was passing through the Narrows, we might have suffered a great disaster. It was the Belgian

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Coast Patrol, with its assumption of strength behind it, that saved us.'

The admiral in command at Dover was, of course, wrong from the psychological point of view, but his reasoning reflected the views held by Jellicoe in the Grand Fleet, by de Chair in the Northern Mists, and by Tyrwhitt at Harwich. They realized the responsibilities which had been entrusted to them and desired to avoid all distractions to themselves, their officers and men in carrying out their several tasks, on the successful performance of which everything, in the last analysis, depended; moreover, from articles in the newspapers, the enemy might pick up information of use to them.

These incidents are recalled because they reveal the mind and method of the author of these reminiscences. Entrusted time and again with duties of an exceptional character, he consistently endeavoured to evade public notice; the last thing of which he thought was public applause, just as he was indifferent to ignorant criticism. Throughout his long and active career, he went on his way, sometimes not suffering fools too gladly. He was regarded as something of an enigma by thousands of his fellow-countrymen as well as by many of his fellow-officers. Assigned jobs which aroused curiosity, from the day when he was chief of the intelligence service in the Benin Expedition in 1897, he always endeavoured to avoid the limelight.

When the statesmen of the Allies were assembled at Versailles in 1918, a distinguished civil servant talked over with me some of the outstanding events of the previous four years of violence. He declared that, though the nation might not realize it until the story of the Old Navy and the New Navy came to be written in perspective and without personal bias, the Great War had, in fact, been won before a gun had been fired in anger—by Fisher and the officers who had been associated with him. He was the man who foresaw that war was coming, introduced the 'Dreadnought' design, with increased draught and beam which delayed its opening until he had got the Royal Navy ready for the ordeal, and picked, years in advance of the event, a young and comparatively unknown officer, John Rushworth Jellicoe, as Commander-in-Chief of the Grand Fleet.

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During the years of the reorganization of this country's naval power—the calling home of the distant squadrons of ships which could neither fight nor run away, and the commissioning by the officers and men thus released of squadrons of new ships, as well as the general 'clean-up' of outworn men and material—the writer of these reminiscences was at his right hand, persevering in face of concentrated criticisms from the old school, and a great deal of misrepresentation of innocent actions.

And another officer of the Royal Navy, Admiral Sir Percy Scott, must, in fairness, be mentioned as having also been in the 'Fishpond,' as it was called. This 'gunnery fanatic,' as he was sometimes described, preached in and out of season that 'spit and polish' were all very well, but that men-of-war were built to fight. Scott's methods of achieving his ends were the very antithesis of Bacon's. He courted the Press because he believed that only by publicity could he shame the Old Navy into regarding naval warfare as a serious matter. Just as the one tried to evade the limelight, so the other used every means to attract it to himself and to those who opposed him. And, it is probable, that each in his own sphere was right.

Looking back on the years of the Great War, the conclusion must be that the foundations of victory were laid in the preceding years of peace by an invincible quartet—Fisher, Jellicoe, Bacon, and Scott.

Sir Reginald Bacon, living in retirement, has since become known as a writer. He is recognized as the exponent of the tactics employed by his friend at the Battle of Jutland, but perhaps the greatest service which his pen has rendered to later generations has been the writing of the full-length life of that friend, Earl Jellicoe.

For the rest, Sir Reginald Bacon tells his own story in the following pages.

ARCHIBALD HURD.

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Introduction

THE YEAR 1900 MARKED A GREAT CHANGE IN THE BRITISH Navy. The old century had ended and with it the last vestige of sail power for man-of-war propulsion. It is not too much to say that, for the first three-quarters of that century, the ability of naval officers had been gauged almost entirely from the sailing ship point of view. Practically all the officers, both in the senior and junior ranks, had spent the whole of their lives in masted ships. Gunnery had increased but little since the time of Trafalgar. Muzzle-loading was still universal. Fifteen hundred to two thousand yards was looked on as a probable battle range. Ramming was still a battle tactic, and explosive charges at the end of the lower boom were fitted to damage any ship that missed ramming, or tried old-time boarding tactics. Steam propulsion was looked on as a convenience rather than a dominant factor which involved new tactics.

It is not to be wondered, therefore, that during the last quarter of the nineteenth century most senior as well as many of the junior officers found it difficult to break away from the ingrained principles that had been instilled into them. Difficult, indeed, because there was no apparent need to alter the old accepted views on sea fighting and training. It is true that the Whitehead torpedo had arrived and threatened to rob the battleship of its proud boast of fearing no craft that floated on the surface of the water, but its range was still only half that of a forecasted fleet action.

There was, however, a spirit of unrest fermenting in the minds of a section of the younger officers, who looked, not merely on the present, but forward into the future. These foresaw that great changes were imminent, and that old ideas did not fit in with the rapid advances that were being

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made in ship construction, gun power, and the Whitehead torpedo. They had seen masts, yards and sail power tardily fade away. They had noted the progress of steam and how water-tube boilers and higher steam pressures had raised the speed of battleships to sixteen and seventeen knots and promised still further increases. Breech-loading had greatly increased muzzle velocity, by permitting length to be added to the guns; but, so far, this extra velocity given to the projectiles had been devoted to armour-piercing rather than to increasing the range of an action. The difficulty of judging range was being eliminated by the greater accuracy of Barr and Stroud's range-finders, and, finally, during the last two years of the century, trials were being undertaken to ascertain if a longer battle range of six, or even seven, thousand yards was a practical proposition. The trials were promising well, and had opened up an entirely new vista so far as naval gunnery was concerned.

If seven thousand yards was a practical battle range, why not ten or more? Where would it end? A whole new technique would need developing. How would these ranges react on tactics? Of course such a development was bound to find its detractors as well as its champions. "Why?" asked the conservative and shell-backed sailor, "why go to long ranges? Surely close action is more decisive and more suited to British pluck? Long ranges will place the foreigner on a par with a Britisher. Nelson fought at short ranges, so why should not we do the same?"

That wretched idea that the British nation owned the world's supply of pluck, and that foreigners were wanting in that virtue, has ever been a stumbling-block to progress in our Navy. The answer, of course, was that if an enemy could fight at seven thousand yards, whereas we were only efficient at three thousand, our fleet would be put out of action before they could fire a gun. This was unanswerable; so long-range shooting was adopted in principle.

Almost at this same date the torpedo was given a greatly increased range. This of itself would have forced opposing fleets apart; for, just as the shorter-range torpedo had controlled tactics to the extent of preventing ramming and boarding, so, in the future, it would be bound to exercise

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an influence in keeping fleets apart. It could probably not decide actions, but it would impose adverse tactics on the opposing fleet; thus, we see, that, at the end of the century, intellectual problems were arising quite different from any that had hitherto been visualized in the Navy, and an increased demand arose for naval officers with brain power. Thought and calculation in senior officers were in future to be more valuable than showy rashness and gallantry. Of course, gallantry was as much as ever in demand for officers in command of destroyers, submarines, and light cruisers. But for those officers who held high command, brain power and bulldog tenacity, tempered by meticulously correct judgment, were the main requisites, and a severe repression of gambling instincts and of a desire to take unjustifiable risk had become a compelling duty.

It was fast becoming apparent that advances in material were bringing about changes in strategy and tactics. The old rough-and-ready seamen of the mid-Victorian era were dying out and giving place to educated, scientific, and mechanically minded sailors; the loud-voiced, narrowly educated officers were on the way to being replaced by those who had, by thought and study, adapted their minds to the handling of the huge war engines, still called ships, and the intricate problems attending their functions in war. The books on naval strategy in the olden times, written by Captain Mahan, U.S.N., were being largely read. How were the necessary changes to be effected? Undoubtedly time would alter, modify, and improve; but time could only work slowly. Some genius with vision and drive was urgently needed, and ardently hoped for, by the more far-seeing of the younger officers. It was at this critical time that Admiral Sir John Fisher came to the fore; and, as we shall see, ruthlessly reorganized the Navy, broke through customs and precedents, and silenced shibboleths that, up to that date, had passed for professional lore, but had now lost all practical meaning.

The finishing years of the nineteenth century witnessed the final scenes of the passing of the old Navy and heralded the birth of a new service—a service old, indeed, in traditions and *esprit de corps*, but new, not only in material and

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the fruits of invention, but also in ideas, in greater vision, and in the fuller knowledge of the value and the uses to which that material could be put for the furtherance of our strength afloat and our assured domination of the seas and oceans.

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PART I

Pre-War

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Chapter I

'EMPRESS OF INDIA'—PARIS 1900 EXHIBITION—WAR COURSE, 1900

THOSE WHO FORM THEIR OPINIONS MERELY FROM THE chatter of their neighbours are apt glibly to gird at dictators; whereas others who take the trouble to study the past history and present social ailments of totalitarian countries are more inclined to value the great reforms which have been effected by the exercise of the dictatorial powers of their rulers. Nor do the former pay sufficient attention to the fact that the majority of the populations of those countries look up to and revere with almost religious fervour the dictator who governs their destinies. It is well, therefore, to recognize that totalitarian government is welcomed by the majority of those governed, but inveighed against by their neighbours; who, although perfectly within their rights in criticizing the repercussions that the totalitarian form of government may exercise on their own country, have absolutely no warrant to lecture a nation on what its people may consider to be the value of the particular form of government to those by whom it has been adopted.

There are, however, two matters which all will agree might well be settled by a dictatorial fiat. The first is, that when partridge driving and covert shooting, a decision is required as to whether the guns should number from the right or left. The second is more germane to this chapter —to settle whether 1900 or 1901 was the first year of the century.

Unfortunately the only dictators of note in 1900 were the Kaiser Wilhelm II of Germany and Abdul Hamid, the Sultan of Turkey. No ruling was then obtained from either of these potentates. Thus so far these matters have never been authoritatively settled.

The difficulty regarding the determination of the first year of the century is primarily due to the fact that the

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calendar has never allowed for the year 'nought.' Nor is it helped by the fact that Jesus of Nazareth was born in 3 B.C. The whole matter is of small importance and may be relegated to the same pigeon-hole as: 'This man's father is my father's son': or the determination quantitively of 'a pair of twins.' But it did form the subject for a considerable amount of idle discussion in the opening days of 1900.

To me the year 1900 was one of importance, since in June of that year I was promoted to the rank of Post Captain. I was fully young, having been the youngest of the Lieutenants promoted to Commander in June 1895. Being under thirty-seven years of age in June 1900, I was bound to be an Admiral before I was forty-nine at the current rate of promotions; I would therefore be certain to suffer from unemployment when on the Admiral's list before the time came for my retirement. However, needless to say, there were many accompanying, and, I must confess, surpassing advantages. The last fence in my race to the finishing post had been surmounted, and there remained nothing except the rabbit holes of misfortune to bring me down before finishing my career. But I was in no hurry to get promotion.

I was, however, anxious to get my First Lieutenant, Arthur Lowry, promoted before he became too old. He was a most charming man and a very good officer, but unfortunately suffered from severe lung trouble. He had, during the past year, asked me to use my influence with Sir John Fisher to get him the command of the torpedo-boat stationed at Malta, but I could not agree to do this on account of his health. The severe exposure to weather in small vessels which such employment necessitated, would have been very prejudicial to his complaint. But when the captain of the *Empress of India*, Captain Hart Dyke, went home during the spring of the year on leave for private reasons, I suggested to him that when he went to the Admiralty, as he was certain to do before returning, he should plump for Lowry's promotion and not for mine. Whether he did this or not I do not know, for, as it turned out, Sir John Fisher had recommended me for promotion; so the fates worked against my suggestion.[1]

[1] Arthur Lowry was promoted to Commander at the end of 1900. He died in 1903.

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H.M.S. 'EMPRESS OF INDIA'

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At that time there were several of the more junior officers who were greatly disturbed at the want of preparation of the Navy for war. The Navy was quite efficient, the ships in good order, and the men well trained, but there was no authoritative information as to how they would be employed in battle or in what formation they would fight the enemy. As an illustration of this I recall that Rear-Admiral Gerard Noel, one of the finest of the pure, as differentiated from war-applied, tacticians we had, while temporarily in command of the Fleet, carried out some unique manœuvres and had asked for two officers from each ship to forward to him any remarks on them that they might wish to make. Lieutenant Richmond[1] and I tried to twist these manœuvrings to fill a war-time frame, and sent them along. They were kindly acknowledged; but Sir Gerard at the same time replied that they were purely for peace use and had no connection with naval warfare. This was a great blow. We sent in no more remarks.

Speaking for myself and, I am convinced, also for some of the officers of about my rank—that of Commander—we had a feeling of depression about the Navy generally. Not as regards the efficiency, zeal, or devotion of the officers and men; but we felt that the Navy was too much of a peace-time, and too little of a war-time, service. The tactics practised were excellent for teaching officers to handle ships but they had no relation to war. Nor did the disposition of the Fleet at the time of the Fashoda crisis lessen our anxiety in this respect. The torpedo had grown to be a real menace. Torpedo craft had grown into destroyers. Yet there was no co-ordination between them and the Battle Fleet. We felt that a radical shake-up in tactics and strategy was required; but who, we asked ourselves, was a big enough man to take on the work? It is not difficult, therefore, to appreciate the intense relief and pleasure it was to find in Sir John Fisher a man who looked on the Navy as an instrument for war, and was prepared to throw his vast energy into the work of rehabilitating that Service. Suddenly he descended upon us; almost, so to speak, out of the blue, ardently, dynamically inspired with the purpose of

[1] Now Admiral Sir Herbert Richmond, Master of Downing College, Cambridge.

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developing a war-time complex in the Navy, and of tuning the minds of officers to war conditions. I never can forget the enormous relief that I, and I am sure others, felt to find ourselves serving under such a genius. We literally felt born again, with the cloud of doubt and perplexity lifted from our minds.

Soon after Sir John arrived on the Mediterranean Station he obtained from his Flag Captain the names of any officers who might be considered to possess special qualifications, and from these he constituted a committee whose business it was to formulate proposals for the summer manœuvres of the Fleet. At the same time he gave us one of his breezy lectures, in which he laid particular stress on the need for discovering the best methods for dealing with torpedo attacks. In concluding he remarked that he would be glad to receive suggestions from any officer. It was in this that his extraordinary ability manifested itself. He was a living winnowing machine. He welcomed suggestions from all who possessed ideas. These he assimilated, separating the wheat from the chaff. The majority of our Admirals never consulted any officer under the rank of a Post Captain; and few even unbent to this extent. Fisher was just the opposite; rank and age to him had no meaning so far as gathering information was concerned. All grist was welcome at his mill. Moreover, he always gave full credit to those who helped him; he never pretended that all his schemes originated in his own brain; he was most magnanimous in acknowledging assistance. As a result of his request I sent him a screed about the use of torpedo craft both for attack and defence of a fleet. I scribbled it out one morning and then had qualms as to whether it was worth while to send it along. However, I did so, and the decision I made that morning probably altered the whole of my after career, for Sir John immediately sent for me; and, for the remainder of the time that I was on the Station, he kept me hard at work on his various schemes. He was, and continued to be, very kind to me and my suggestions. At the same time he was very pleased with the records and efficiency of the *Empress of India*, the battleship of which I was the Commander. These were due in the fullest degree to the whole-hearted co-operation of the ship's company and

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officers; and there is little doubt that the records achieved by that ship in sport and boat-racing would be hard to beat.

In mentioning the records of the *Empress* in boat-racing, I am reminded of the extraordinary results obtained by our Royal Marines in boat-pulling. Of course, on arriving on the Station I set about to obtain a Malta-built cutter, an eight-oared galley, and a whaler, for these boats were mahogany built and much lighter than the rather cumbersome English prototypes. In our first regatta the Royal Marines entered a crew in each of the two twelve-oared cutter races, namely that for English boats and the one for twelve-oared Malta-built boats, and also a crew for the jolly-boat race. They won all three! Before the next regatta their best boat's crew seemed to be so good that they asked me to allow them to compete in the race for the Duke of Edinburgh's Cup, using the twelve-oared Malta-built boat. To win this race was to gain the blue ribbon of boat-pulling on the Station. Never before had any but seamen crews competed. I therefore arranged a trial between crews of seamen and the Marines' crews. In this they had to pull against one another in the English and Maltese boats and then to change boats to pull again. The Marines proved to be far the superior, so I allowed them to enter the Maltese boat in the premier race, and they won! I believe this was the only occasion on which the race has ever been won by any but a seaman crew.

But to return to June 1900, and my promotion, anent which a *difficile* episode resulted.

The First Lieutenant of one of the battleships was fairly certain of his promotion, as also was his opposite number in another battleship. He therefore arranged a dinner at the Sliema Club for the night when the promotion list would first be made public, and asked the other Lieutenant and his wife; and, as I was supposed also to be in the running for promotion, my wife and I were also bidden. As bad luck would have it, I was the only one of the three to get promotion. Of course, the cheeriness of the party was rather damped however much each of us tried to hide our antipodal feelings.

This mention of my wife reminds me that I have been severely taken to task by some readers of the previous

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volume of my reminiscences for not having mentioned my marriage. They seemed to think that by not doing so that lady has been slighted. The reason I refrained from mentioning my wedding was that I considered that the matter was one concerning us only, and was outside of all comment. But, to put the matter right, I will say that the best day's work I ever did was on 2 June 1894, when I married Cicely, the daughter of Henry Surtees, of Redworth, Co. Durham, whereby I obtained the very best of wives and one who proved the most devoted and wisest of mothers. I might here add that, to the family, she has been known by three pet names: the 'Game Cart,' as invariably she held the basket during rambles after wild flowers or mushrooms; the 'Dragon,' a fit title for one who held the guardianship of the health of the family and of its moral principles; and the 'Earwig,' because the children read in some natural history publication that earwigs were the best of all mothers.

We had three children. Dudley, the eldest boy, was mortally wounded at the battle of Loos and died shortly afterwards. A clever lad, he had gained the Tomlin Prize at Eton for mathematical ability and had before him a promising scientific career. Robin, a naval cadet, was poisoned at Osborne College; this affected his heart and he succumbed to an attack of pneumonia when eighteen years of age. He gave signs of having a quaint humour and considerable literary ability. Dorothy, the only daughter, is at present a Company Commander in the Auxiliary Territorial Service.

Now I must return to my other *moutons*, although this term, even in French, is hardly suitable to one's family.

There are few more difficult times to a Sea Lord at the Admiralty than the two fortnights in the year when the six monthly promotions of officers to the Commanders and Captains list come forward for settlement. In the olden days promotions could be fairly well determined by promoting officers who had no black mark registered against their names at the Admiralty. Gradually, as changes crept in, the standard of officers rose; and now no man stands a chance of promotion who has not a long string of eulogistic recommendations.

When I first went to sea, to be passed over for pro-

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motion carried with it a slur, a certainty that either a man was useless or had sinned against the Admiralty. Now such a failure is merely a sign that he was not one of the heaven-born fortunate ones. The times when the selection of officers for promotion is on the *tapis* are dread days to the Sea Lords concerned—lists have to be prepared of all the officers that are eligible for higher rank. These are issued to the Sea Lords immediately concerned—usually the First Sea Lord and the Second Sea Lord—the Naval Secretary to the First Lord, and any others should it be considered desirable. A first sifting then takes place and the numbers are greatly reduced to, probably, at least, twice as many names as there are vacancies. The tug-of-war then begins. The official microscope is brought to bear. About a certain number there is no doubt—these are the sheep; the goats have been eliminated, but how about the llamas? This last stage involves on the selectors a most invidious task, for a number of good men must perforce be barred—perhaps for some of them it is their last chance of obtaining promotion. But a decision has to be reached, the welfare of the Navy has to be the first consideration; and before that juggernaut good men must be sacrificed and their last hope of further preferment crushed.

Promotion to the rank of Post Captain marks a great change in the recipient's life on board ship. He is no longer a member of a 'Mess'; he has in future, to a great extent, to live the life of a hermit. He feeds in solitude except on those occasions when he entertains his officers or other friends. He misses the good fellowship of mess-mates and no longer enjoys the running fire of conversation, the ready argument and repartee which so greatly enliven meal times in a ward-room mess. But there is little doubt that this semi-seclusion is, in the majority of cases, a necessary part of the discipline of the ship. That unquestioned obedience to orders, so essential in a man-of-war, is better fostered if those orders are issued by someone who lives apart. Some men might, perhaps, gain better the affection and reverence of their officers by living daily with them as messmates, but the majority might, under such conditions, fail to preserve the dignity necessary to their

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position. It is difficult to mask the iron fibre of dignity in the velvet glove; it must be felt through the velvet, yet never too crudely, nor lost in the padding of the velvet. Further, he would be bound to come to know too much about the more or less private failings and foibles of his officers. In fact, he might be placed in the position of one of the most perfect bishops against whom I have heard one disparagement only, namely, that expressed to me remorsefully by one of his clerical flock, that 'he knew too much about the parsons of his diocese!'

Well, I was not at all glad to leave the *Empress of India*. In those days of three-year commissions the first eighteen months was a time of severe work for the Commander. Usually he rose at 3.30 a.m. in the summer and 4.30 in winter, was at work all day until, after going the rounds at nine o'clock, he was free to go to bed. He was the hub of a many-spoked wheel. During the third six months his work eased considerably and for the last year the ship's work ran almost automatically, since everyone knew his job. The officers knew the men intimately and their various capabilities. The whole of the nine hundred or so of the ship's complement had been welded into a working whole; and, so far as drills and sport were concerned, were able to take a lead in all competitions. Everyone was happy in seeing and enjoying the fruits of his labours. The end of the second year was a poor time for the Commander to leave his ship.

Not long after I had left the *Empress* the time arrived for her to leave the Mediterranean Station and return to England to pay off. It was obligatory before leaving to turn over any challenge cups which had been won to the runners-up in the various competitions. When the day came for so doing the number to be returned was considerable, and her Commander, with pardonable pride, fitted up the 42-feet sailing launch, the largest boat carried by the ship, with a suitable dais on which all the cups were publicly displayed. This 20-ton boat was towed with due ceremony through the Fleet and the trophies delivered to their rightful recipients. This piece of 'swank' was easily forgiven to a ship that had done so well and was on the eve of leaving the command.

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I left the ship at Salonica and found, to my surprise, that, before the money for my ticket could be accepted, every sovereign was weighed. 'Sweating' gold coins by shaking them together industriously in a bag, and collecting the resulting gold dust, was apparently a common practice among the Levantine population. So, in order to defeat this spoliation, the merchants and shopkeepers carried with them a simple little pocket balance on which the weight of each gold coin was tested. It was a curious fact that about 10 per cent of the sovereigns issued by our Paymaster would not pass the test necessary for acceptance.

Soon after arriving in England the Admiralty sent me to France to report on the electrical part of the Paris Exhibition. My wife and I were in Paris for about three weeks and I was able to report on many matters of interest. One thing in particular I remember that I pressed home was the backward state of our Navy in the matter of searchlights and projectors. My criticisms created quite a considerable flutter in the dovecots of the *Vernon* and the A.D.T. Dept. at the Admiralty. But I am glad to say that it led to an entire redesign and new supply of the searchlights in the Navy.

Among other exhibits which we visited which were not electrical was the Fine Art Gallery. There was here much to be admired and enjoyed, but one picture in particular caused us to marvel. It was a crude painting of a house, such as we all were wont to sketch when we were in the nursery. A square house with a front door, a window on each side, and three more windows over it. In the picture the windows were rather rhomboidal in shape instead of rectangular, the roof was crooked, and there was the inevitable chimney of our early attempts with curly smoke coming out of it. It was a production for which a child of ten might well have been smacked. It had been awarded a very high prize. This reminds me of a print of a picture which I came across in the *Listener* and which was highly spoken of in the letterpress. I cut it out and for several years kept it by me. Often, when friends who happened to be with us were in need of amusement, I would offer ten pounds to any of them who could tell me what the production was intended to represent. On no occasion did

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anyone hazard the suggestion that this weird enigma represented anything at all. It was, so the art critic had written, supposed to be a bullfight. Having divulged this secret, I again would renew my offer of ten pounds if anyone would indicate where the man, the bull, or a horse could be found. The only illuminating remark I was ever vouchsafed was that there was either a baby's bottle or a banana in the right hand bottom corner. So much for modern art!

From the back of my mind comes the following verse:

> The world is very fair to see
> But artists will not let it be,
> They fiddle with the works of God
> And make them look uncommon odd.
> Further they take good honest paint
> To represent things as they ain't,
> And then they charge us for the time
> They took to perpetrate the crime.

After strict attention to business for a fortnight, to our astonishment we tumbled one day upon a London Bobby. It turned out that two or three of the Metropolitan Police had been sent over to add a finish to the British exhibit. We almost seemed to be back again in England. Unlike Charlie Chaplin, who apparently dives down a side street and changes his hat whenever he sees a policeman, we felt far more inclined to treat the constable as an old friend and to shake him warmly by the hand.

Soon after my return from Paris I joined a War Course that was starting at Greenwich College. This was the second session of what subsequently became a yearly institution. Captain H. J. May was in charge and brought much acumen to bear on a course of studies which was by no means easy to devise and initiate. As years went on the syllabus of the course, as well as the problems to be tackled, became more stereotyped and the work of the Captain in charge of the course became correspondingly easier. But, for the first year or two, the matter bristled with difficulties.

There had been little since 1805 to stimulate the study of naval strategy and tactics by naval officers. Changes had crept in so slowly as to be hardly perceptible. Steam

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had superseded sail, but had taken eighty-five years to do so. Iron, and then steel, had taken the place of wood; but even this took fully forty years to come about. Guns had increased in power; but this had been countered by improvements in armour, and, important above all other consideration, the range at which a ship or fleet would fight in action was still a matter of doubt. The advent of steam had introduced a mobility unknown in the old sailing days and this had given rise to a class of evolutions known as 'steam tactics.' It is easy to understand that it is often necessary to compress or extend the space occupied by a fleet. Thus in narrow waters a single line may be the best for navigational purposes: in open water a more compact arrangement of two or more lines is convenient, while for anchoring in harbour a different arrangement may present advantages. Steam tactics taught and exercised such alterations in the movement of the ships; but these tactics did not stop there, for complication was piled on to complication. A fleet was split up into divisions and subdivisions which could be arranged abreast, in quarter line or bow line or on intermediate lines of bearing. All this was excellent for practising the Captains in handling their ships; but the constant practice of these mobility movements brought a confusion of ideas to the majority of the senior officers on the subject of how a fleet action should be fought, and controversy arose as to the best formation in which to fight a battle. Since steam power had endowed an Admiral with the ability of dividing up his fleet into small units, surely, it was argued, this ability should enable him to arrange his ships so as to obtain an advantage in a fleet action?

Having studied the question from several angles I was convinced that the only formation in which to fight a fleet action was in one single line. The only objection to this, so far as I could see, was that it was the same formation as that in which sailing battleships had been accustomed to fight! It seemed so foolish to many that, with unlimited manœuvring power at our disposal, we should select the same formation as our great-great-grandfathers had adopted when working under the limitations imposed by wind and sail. There were, however, two points which, to my mind,

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carried conviction. One, that a single line gave the greatest unimpeded arc of fire for every ship; and the other, that the very small superiority in speed of one modern fleet over another cancelled any possible advantage that extra mobility might confer. Mobility was useless without considerable excess of speed. These points I discussed with Sir John Fisher when in the Mediterranean, and this led to his arranging his tactical table, on which were set out the dummy ships in line of battle, in a single line with destroyer protection ahead and on the beam.

Similarly at Greenwich during the tactical course, I took on any dissidents on the tactical board, and there the unique advantages of the single line were amply proved. Five years afterwards, when Sir Francis Bridgeman hoisted his flag temporarily in the *Irresistible*, which ship I commanded, he and I discussed the matter, for generally in the Navy the point was still the subject of debate. This led to a miniature battle being staged between two divisions of the Mediterranean Fleet, Admiral Bridgeman taking the battleships and Sir Hedworth Meux his cruisers. The latter was firmly convinced that with his small superiority of speed he could manœuvre an advantage; but he found that that speed availed him nothing. He also discovered that the best he could do was to keep abreast of the battleships steaming on a circle of larger radius; the two radii being proportional to the speed of the two fleets.

Work with the tactical board is the only item of the course at Greenwich that remains in my memory.

I regret to say that shortly after our course had been completed Rear-Admiral May died,[1] to the sorrow of all. His death was largely the result of overwork brought about by the extraordinary energy that he threw into everything he did. These early war courses were chiefly useful in causing senior officers to 'think,' and to bring them face to face with an appreciation of the vastness of the problems that war would create. They served to bring home to the ordinary happy-go-lucky naval officer the fact that sudden inspiration could not be relied on to solve war problems, and he was made to realize the necessity for constant study and thought if he was to acquit himself with credit in the

[1] He had been promoted to Flag rank shortly before then.

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Great Ordeal. The appreciation of these facts was of even greater value to the individual than the actual instruction provided by the course.

I have already mentioned *en passant* the works of Admiral Mahan. These deserve a more extended notice. Previous to the publication of *The Influence of Sea Power on History* there were no publications or standard works that were of much real value to the naval officer who wished to study either the war-time tactics or strategy of the modern Navy. James' *Naval History* was an excellent book which gave a reasonably accurate account of the old wars, but it required Mahan's insight to expound the relation between the old-time naval strategy and the international complications of the olden periods, and so enable lessons, hitherto hidden, to be applied to modern sea conditions. The other books available, such as Philip Colomb's *Naval Warfare*, and Gerard Noel's *Gun, Ram and Torpedo*, were of little value. There were, in fact, no books which brought real help to the mind of the inquiring naval officer. The signal book and the manual of Fleet Manœuvres merely dealt with peace exercises, and were silent as to the tactics necessary in war-time. Nor was this silence entirely accidental. In the nineteenth century the Admiralty had a dread of issuing any fighting instructions. To do so had been the practice in the eighteenth century, when an attempt had been made to indicate the general principles to be observed in a fleet action. Experience, however, showed that sea conditions were too variable to allow fleet battles to be made the subject of hard-and-fast rules. Cases occurred where opportunities were lost through rigid adherence to the instructions, and the officers who had failed therefore placed the blame on the Admiralty, a procedure which was distinctly disagreeable to that august body. Further, looking at the matter from the Admiral's point of view, it was palpably unfair that if an officer, in wishing to gain an advantage, broke a definite instruction and eventually lost the action, he inevitably had to be censured for his boldness.

After the battle of Minorca in 1744 Admiral Mathews was court-martialled and cashiered for breaking the line of battle by bearing down upon the enemy, a manœuvre held to be against the fighting instructions. The majority of the

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captains of the ships of his fleet (undoubtedly acting in accordance with the fighting instructions), by refusing to support him, caused him to lose the battle.

In 1756 Admiral Byng, faced by much the same position, adhered to the fighting instructions, remarking that 'he did not intend to make the mistake made by Mr. Mathews.' As a consequence he was court-martialled for not doing his utmost and shot. After this miscarriage of justice, the Admiralty rightly came to the conclusion that they had better leave admirals to fight their own battles; for, not only were overriding instructions likely to afford excuses for failure and encourage mediocracy, but they recognized that an axiom of Admiralty administration should be never to incur responsibility; since, on all occasions, they should appear, in the eyes of the Navy, to be as immaculate as Cæsar's wife and as infallible as the Pope. So, for ever after, it has been their practice to issue appreciations which are framed so as to place responsibility for any failure on some individual outside Whitehall, and they have refrained wisely from issuing definite instructions as to the conduct of any operations of the ships or fleets on the high seas. This was a most sensible procedure, since the man on the spot is left unfettered to use his judgment as circumstances may dictate.

In the Great War communication by wireless led to a tendency for the Admiralty to lapse from this narrow path of grace. To wit, the instructions signalled after the attack by the German battle-cruisers on Scarborough for our battle-cruisers to 'keep outside the mine-fields.' Sir David Beatty had intended, in accordance with a suggestion from Sir John Jellicoe, to go between the two mine-fields. Had it not been for the Admiralty order this would have been done and the enemy battle-cruisers would have been encountered. As it was, they escaped.

Pursuing this same policy, in the matter of discipline and administration, the Admiralty gradually evolved a book of instructions for the conduct of the Navy on matters other than fighting. So cunningly was this publication contrived that, whatever evil may happen in the daily life of the Navy, a finger can at once be put on the culprit. Every contingency has been provided for, partly from previous experience,

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partly from foresight; it is, therefore, a splendid work wherewith to regulate a disciplined Service. It has been cynically said that it is impossible to comply both with the 'King's Regulations and Admiralty Instructions' (to give this work its full title) and also with the teaching of the Bible. This may be so, but it is well for officers to appreciate that the Admiralty have the last word, and that such a line of defence, if advanced by a naval sinner, would meet with short shrift from my Lords Commissioners of the Admiralty.

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Chapter II

LORD WOLSELEY'S MISSION

WHILE I WAS AT GREENWICH A STATEMENT WAS MADE IN Parliament to the effect that the Admiralty had decided to build five submarine boats for trial. It struck me that the naval officer who ought to be selected to command these should be an ex-torpedo lieutenant, for their equipment would largely consist of electrical appliances and torpedoes. I therefore applied to be given the command, and this was approved. But before taking over I was offered the opportunity of going on the staff of Field-Marshal Viscount Wolseley, who was about to visit five European Courts to announce the succession to the throne of King Edward VII. Naturally I accepted.

This procedure was of ancient origin; but, in the twentieth century, somewhat archaic. The other members were Colonel John Hotham, R.H.A., Viscount Castlereagh,[1] and Mr. W. R. Synge of the Foreign Office.

The first place we visited was Aix-la-Chapelle, as Lord Wolseley was anxious to pay a visit to the tomb of Charlemagne, the great warrior-administrator who had been dead close on one thousand years. We, a party headed by a famous soldier, and three others representing branches of modern fighting forces, stood for some time at his sarcophagus. It was impossible while there not to compare, mentally, the difference in arms and war for which the one thousand intervening years had been responsible; a comparison that merely added to the homage which we felt for the vast achievements of this illustrious warrior-king.

Vienna was the place of our first official call. Here, for a day or two, we were accommodated in the Royal Palace; then, after the official banquet which was given in Lord Wolseley's honour, we moved on to more humble quarters.

[1] Afterwards the Marquis of Londonderry.

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FIELD-MARSHAL VISCOUNT WOLSELEY, K.P.

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While we were at that dinner our clothes were packed ; and, according to custom, our baggage was taken to the hotel at which we were to stay during the remainder of our visit to the capital. The custom of hurrying away guests immediately after dinner was hardly in accordance with our northern ideas of hospitality. The apparently indecent haste looked somewhat as if the Emperor wished to wash his hands of any responsibility for the after-effects of the dinner. It might even have been taken as a serious reflection on the 'Cordon Bleu.'

The dinner was of course above reproach, the Imperial Tokay was real nectar ; but, as a matter of fact, the hotel was more comfortable than the palace. The Emperor was well advanced in years, the Lord Chamberlain was of a like age ; and, as generally happens in such a case, the servants also were old and had been employed for years in the palace without much supervision. The result was that the domestic arrangements were slack and the work indifferently done.

It was much the same with the staff of our Royal Palaces when King Edward VII came to the throne. He, however, as Prince of Wales, had noted a good deal, and at once had a spring cleaning so far as the more barnacled personnel was concerned, which was much to the advantage of guests who subsequently stayed at the Royal residences. Often we see a like decadence in a private house, or in the management of an estate, when advancing age overtakes the owner and there is no son to smarten things up.

Lord Fisher tells the tale of how he discovered that eminently human monarch, King Edward VII, who at Sandringham lived the life of a country gentleman and there was the best of hosts, feeling the hot-water can which had been placed in his room, to see if the water was really hot and that this minor duty had not been scamped. Such an act is probably unique in the annals of a Royal residence. Had such a thing happened in the Royal Palace in Vienna there would have been a holy upheaval.

The visit to Vienna was one of melancholy interest. Only a comparatively short while before, the terrible tragedy that attended the death of the Archduke Rudolf had heavily stricken the aged Emperor, and the shadow of that fell happening was still darkening the atmosphere of the Court.

Austria possessed what was probably the most exclusive

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of all the European Courts. No person was allowed to be presented at Court, nor to attend Royal functions, who could not show noble descent from all sixteen great-grandparents. The official etiquette, which was strict to the verge of severity, was carried into the inner life of the Royal Family, which did not tend to promote happiness. The Empress was not permitted to visit her children in the nursery without due notice of her intended visit having been given. The control and upbringing of her children was in this way, intentionally, it has been said, denied her and had passed into the rather grasping and intriguing hands of the Dowager Empress.

During our visit we saw all the sights and places worth seeing. Perhaps that of the greatest interest was the Royal *manège*, or riding stable, where the State horses were trained. One magnificent charger, rather more of a 'war horse' than thoroughbred build, had been taught to rear with his front hoofs some two or three feet above the ground, thus imitating exactly the pose of the horse of the conventional equestrian statue. It could remain in that position for quite a time, and must have added a spectacular touch when the Emperor took up his position for the Royal Salute at a Review.

After Vienna we moved on to Belgrade, the capital of what was then Servia. Belgrade and Vienna were two very different places. Vienna could, of course, compare favourably with any capital in Europe; while Belgrade was a poor town, badly lighted and with all the streets except the main thoroughfares paved with appallingly uneven cobblestones. We were accommodated in the principal hotel, to which the King kindly sent a special cook to minister to our bodily needs.

King Alexander was not a man of prepossessing personality. He was tall and thin, wore pince-nez, and had an alert, unrestful, and rather suspicious manner. He had no Royal presence. To us, however, he was both cordial and pleasant.

We soon discovered that we had arrived in Belgrade at a most interesting time, for all the Servian world and his wife were much interested in the reported imminent birth of an heir or heiress to the Servian throne. Queen Draga was

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QUEEN DRAGA OF SERVIA

KING ALEXANDER OF SERVIA

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rumoured to be expecting shortly to become a mother; and we were informed that it was uncertain if the Queen would be sufficiently well to receive the Mission; however, before we left we were granted an audience. I may say that in the end this hope proved to have been unfounded.

It is unnecessary now to rake up old scandals; and, goodness knows, there were plenty anent the Royal Palace. But tongues, even then, were busy with surmise as to whether the infant, who would be nominally heir to the throne, would in reality be the child of Queen Draga or of some other relative. However, the scandal had received a slight setback, for a day or two before our arrival a stork had been seen to settle on the roof of the Royal Palace. Before we left Belgrade King Alexander's aide-de-camp returned from a mission to St. Petersburg with a letter from the Tsar graciously acceding to the King's request to become godfather to the young person when it arrived. So, for the moment, all seemed well; but the air was heavy with rumour and the rumbling of trouble in the future could be distantly heard.

Not long after our departure the Tsar ordered a famous Viennese gynæcologist to report on Queen Draga's health. His visit destroyed all hope of an heir to the Servian throne.

King Alexander was never really popular with the Servians. He had deposed his own father and made him Commander-in-Chief of the Army; other more scandalous proceedings followed, and the myth regarding the heir to the throne added fuel to the fire. Although he had started well as King, discontent was later aroused by his arbitrary acts, the chief of which was his nomination of the brother of the somewhat notorious Draga as heir apparent; this estranged the Army and a revolution broke out. The palace was entered by a gang of officers intent on murder; but the King and Queen took refuge in a secret chamber and eluded the search party, although the Royal couple could hear the tappings by which the ruffians sought to discover the entrance to their hiding-place. In the morning, from their window, they saw one of their ex-aides-de-camp crossing the square and succeeded in attracting his attention. He immediately betrayed them to the assassins. The

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whole episode was marked by gross brutality, more worthy of the Middle Ages than of the twentieth century.

It would have been far more decent to have put the pair into a first-class carriage of a through train to Vienna. However, with two Kings already dethroned, the Servians hesitated to increase the number of the ex-rulers. Well, Servia paid heavily for their barbarity and sins by the agony endured in the Great War. It is conceivable that, had these murders not been committed, affairs in the Balkans might have taken a different turn, the Great War might never have taken place, and Servia would not have been devastated and laid waste by the Austrian and Bulgarian armies. It is not unreasonable to look on the horrors undergone by Servia in that war as a just expiation of this foul regicide. With the death of Alexander the House of Obrenovich came to an end, and that of Karageorgevich has, so far, reigned undisturbed.

We left Belgrade, where suspicion was rampant, and where an undercurrent of suspense pervaded the whole country, and moved on to Bucharest. It was rather like leaving a damp cloud and issuing into warm air and sunlight. Here we found a civilized town well laid out and boasting all the modern amenities, among which were a Pasteur Institute, an Art Gallery, and other public institutions. The modernization of the town and its refinements were almost entirely due to King Carol and Queen Elizabeth. The King was a most able administrator who, for the whole of his reign, steered the country through stormy times. He was actually in command of the combined Russian and Romanian Army when the Turks, under Osman Pasha, surrendered at the conclusion of the siege of Plevna. Queen Elizabeth, who was a princess of Neuweid, was well known in literary circles under the pseudonym of Carmen Sylva. Many of her writings have been translated into all of the European languages. She spoke seven languages, wrote prose in five, and poetry in three. Further she was an accomplished musician and markedly artistic. During the Russo-Turkish war she had devoted herself to nursing; and it was owing to her experiences while so doing that her hair turned a most perfect white. She had special charm; and, although at the time well advanced in years,

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Apr. 1.
1907

Elisabeth

QUEEN ELISABETH OF ROUMANIA
(CARMEN SYLVA)

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was undeniably beautiful. We had the usual functions and receptions; but the one that gave us the greatest pleasure was the musical afternoon to which we were invited by the Queen.

Her salon was rather longer than it was broad, hung with some charming pictures and decorated chiefly with carved wood. It opened into a large conservatory. At the end a dais was raised on which stood a piano and music stands with an antique settee running nearly the whole length in front of the dais. From this a carved wooden staircase led to a gallery which was flanked by book shelves. The whole furnishing was both comfortable and artistic, two qualities which are not always closely associated. When we arrived the Queen was playing the piano accompanied by two violins and a 'cello. After receiving us she continued to play several pieces and we then listened to some excellent singing and music. After these the Queen stepped on to the settee, sat on the dais, and read two of her English poems accompanied by the harp. It was a charmingly posed scene with the Queen looking very noble and sweet, crowned by her snow-white hair. She then read some really beautiful verses she had written on the death of Queen Victoria.

We had not anticipated so enjoyable an afternoon; in fact, having expected that our visit would have been of a purely formal nature, we had privately arranged beforehand that we should be allowed to leave early in order to write letters; but when the Queen gave us permission to go and write these letters, we excused ourselves and remained on until we caused the ladies of the Court to be nearly late in dressing for dinner.

A kindly fate has decreed that queens of the name of Elizabeth should be endowed with especial charm. Queen Elizabeth of Romania, Elizabeth of Belgium, and our own beloved Queen who captivates the hearts of all; all these have created memories dear to the nations over whom they reign or have reigned.

Old Queen Bess has a somewhat different reputation; for, if historians are correct, her physical charm lay chiefly in her own imagination—she was, indeed, clever, astute, and bold when needs required—further she by no means deserved the casual condemnation of the schoolboy who in

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a character sketch wrote: 'Queen Elizabeth was a bad woman, and no wonder, considering that she had six mothers.' Evidently the boy's mother was a strict home disciplinarian!

There have been very few countries which have benefited more from the example and initiative of their Sovereigns than Romania. The Palace was excellently run, infinitely better than that of Vienna. The Court Chamberlain was a man who knew his work. The servants were young and smart, the cook excellent, the wines above reproach. This mention of wine reminds me that, before starting from England, we received the tip to drink, at the various banquets, the wine which was drunk by the Lord Chamberlain, and to stick to the same. Fortunately none of these high dignitaries were teetotallers! The hocks both here and at Vienna were perfect and still remain in my memory; but, as is the case with old hock, very heady, two glasses being quite as much as the average head could comfortably stand. Princess Marie, a daughter of the Duke of Edinburgh and the wife of Prince Ferdinand, the nephew and heir-apparent to King Carol, was extremely beautiful and most popular with all classes in Romania. Unfortunately, she was absent from Bucharest at the time of our visit, but we found everyone was full of praise of her charm and good nature and general *joie de vivre*.

After leaving Bucharest we headed for Constantinople, passing the frontier in the very early hours of the morning. As usual, officers boarded the train to welcome the Field-Marshal, who, however, remained asleep until a more convenient hour. We, of course, did not suffer any of the ordinary inconveniences attending the examination of passports or luggage.

It was at the frontier that an old friend of mine met with an uncomfortable experience. He was well advanced in years, but his hair was still raven-black, which gave him the appearance of being far younger than he really was. Well, the fates decreed that his passport should be guilty of some technical irregularity; so an unnecessarily fussy official had him removed from the train and confined in the local prison. A Turkish prison is decidedly a place of little ease; the dirt and other disagreeable conditions are

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A MUSICAL 'AT HOME' IN QUEEN ELISABETH'S STUDIO IN THE PALACE AT BUCHAREST

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best left to the imagination; but there was yet another worry which affected him even more bitterly. His luggage, being registered through, had gone on to Constantinople and with it his hair-dye! He was delayed several days before he was released at the urgent representation of his solicitous friends; these assembled to meet him on his arrival at Constantinople and to rejoice with him over his release. Then, to their inward delight, they saw that the raven hair was shaded off through purple down to a virgin pure white at the roots.

Another friend met with a less tragic customs *contretemps*. At the Italian frontier, in spite of a statement that he had nothing to declare, his suit-cases were opened and examined. In triumph the examiner unearthed a cigarette-box. He had made a find. In truth he had, for, when opened, a spare set of false teeth grinned at the *doganiere*, with that air of dogged malice which is peculiar to dentures!

In Constantinople we were lodged at the Pera Palace Hotel. It was in the old days before the advent of the several reforms which that ancient city has endured in the last twenty years. The dogs were still the only street scavengers, and the nights were still hideous with the noise of dog fights resulting from one pack poaching on the preserves of another. As no Turk would kill a dog, the isle of dogs was still the place of exile for these animals when they became too numerous; there they ended their days in mutual cannibalism.

Abdul Hamid was a mild-looking old gentleman of Jewish appearance. It was difficult to appreciate that probably he had been responsible for the death of more human beings than any man then living. But it is to his credit that he kept the Balkans quiet. It was not until the amateur hand of the Young Turk had taken over the reins of government that the Balkan Alliance against Turkey became possible, and the Turkish frontier was driven back almost to the walls of Constantinople.

We were at Constantinople on a Friday, so attended the *selamlik*, or procession, undertaken by the Sultan to the mosque. We had excellent places in a room in the palace, opening out on to a terrace from which we had a good view of this rather interesting but now obsolete ceremony.

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The distance from the Palace to the mosque was not more than two hundred and fifty yards along a road, down a fair incline. The route was lined by troops: Albanians dressed in white with black braid; line regiments in blue; naval brigade in red and blue; Arabs with green and red turbans, all with the exception of the last wearing the red fez.

The Sultan appeared in an open carriage drawn by four horses, closely followed by many pashas on foot. The troops all shouted a welcome, which was most effective. The Mullah in the meantime came out on to the platform of the minaret and in a remarkably fine voice called the faithful to prayers. While service was going on in the mosque we were given light refreshments; the troops meanwhile moving off to line up for the march past. Saddle horses were always brought to the mosque in case the Sultan should wish to ride back; but in later years he never did ride, he preferred to drive a handsome pair of white Arabs—while so doing at a sharp trot up the hill, the aforementioned pashas had to run behind the carriage; a performance that their age and rotundity caused them to dislike intensely.

Arriving at the Palace, the Sultan took up a position at a window and watched the march past of three thousand fine, hard-bitten warriors.

Among other festivities we were entertained at a gala performance at the Opera—which did not prove to be a very noteworthy affair.

Some years afterwards, when again in Constantinople, I was offered, but unfortunately did not buy, a unique relic of the Sultan Abdul Hamid, in the shape of a coffee-pot. The lid of the coffee-pot was hollow; and on its underside was fitted a rotary louvre which could be opened or closed from the outside by revolving a knob on top of the lid. The ruffian who offered me the pot stated that it had been given as a present to a Sultan by a previous Shah of Persia. Its purpose was truly Oriental in its brutality, and childlike in its simplicity. It was intended that poison should be secreted in the lid; then, after his food-taster had drunk a cup, to make sure that the coffee was not poisoned, the Sultan would pour out a cup for himself; after which he

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was supposed to turn the button and drop the poison into the coffee ready for his friend's cup; regulating the dose, I should imagine, according to the result desired or the degree of his malevolence. My informant added that it was not etiquette to refuse an invitation to take coffee with the Sultan, but all who were accorded that honour went in fear and trembling. How much of this was truth and how much romance I do not pretend to know.

Constantinople in those days was still at the height of its glory. Angora as it is to-day did not exist, and the Sultan, from the Yildiz Kiosk, ruled a good strip of eastern Europe and Asia Minor. It was said with some truth that by standing for one hour on the Galata Bridge, which spanned the Golden Horn, you would see at least one native from every country in Europe and Asia. It might almost have been said from every country in the world, so cosmopolitan was the capital at that time.

We saw all that was to be seen under the very best auspices. Our cicerone was one of the Sultan's A.D.C.s who invariably acted as guide, philosopher, and friend to all distinguished guests who visited the Sultan; with the result that he had the most marvellous collections of orders possessed by any man. They filled completely both sides of his rather ample bosom; had he received one more it would have had to find a place somewhere on the back of his uniform.

At that time the Moslem women were still kept secluded; and, when outside of their houses, wore *yashmaks*. Our cicerone was most anxious for us to see his house. So we went and found quite an ordinary lodging; but we discovered that he had left the doors of the reception room ajar and that the female inhabitants were able in turn to peep at us through the crack. Hence the object of our visit. It was rather pathetic to think that these poor souls (the Moslem religion, however, does not allow women to have souls) should have considered it a treat to have the chance of seeing our Mission through a crack in the door.

During our entry into the reception room at the palace we, as in duty bound, salaamed, but this we did more decorously than was done by the British Ambassador in the time, if I remember rightly, of Ahmed II. That Sultan, in order

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to obtain what he considered to be a fittingly low reverence from the ambassadors on entering his presence, had the doorway constructed so that each man had to bend double on entering. Our doughty Ambassador, nothing daunted, picked up his coat-tails and entered stern first. A contingency that had not been foreseen by the Sultan!

We were sent by Abdul Hamid to see the Royal carpet factory at Broussa on the shores of the Gulf of Ismid. Here the employees were almost entirely women and children. It seemed as if heredity was largely responsible for the skill of the operators. Even children of not more than four years old, seated by their mothers, would occasionally weave in a strand of wool. I have always had a lingering suspicion that the Sultan had arranged for each of us to have had a carpet as a souvenir, and that they fell into other hands than ours; but this is mere suspicion. At all events, we received no carpets.

So ended our visit to Constantinople: crowded days of great interest. The next time I visited this city the Young Turks were in power.

We left Constantinople in the Ambassador's yacht; and, on our way to Athens, visited the ancient city of Troy, or rather its venerable ruins. The town stood on an eminence overlooking the vast plain not far from the eastern shore of the entrance to the Dardanelles. The magnificent view afforded by the site was a complete vindication of its strategical position, and fully accounted for the pertinacity with which the town had been built, rebuilt, and again rebuilt many times on the same site. Thanks to an efficient guide, the British Vice-Consul, we were able to trace how severely the fates had for centuries dealt with the vanished cities of the past. The ruins of no less than nine towns stand one on top of the other. Starting in the Neolithic Age with a village, four more cities followed, before the town of which Homer sang crowned the hill. This was destroyed by fire. The ninth and last Troy fell into disuse between A.D. 400 and 500.

In view of the vicissitudes which have since attended our friendship with Turkey, it is interesting to recall that it was about this time that Sir John Fisher, who was then Commander-in-Chief of our forces in the Mediterranean,

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AKMED PASHA, A.D.C. TO THE SULTAN OF TURKEY

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visited Constantinople.[1] He there met Kiamil Pasha who had been Grand Vizier and was still one of the Sultan's most trusted advisers. The Pasha recalled the fact that after the Crimean War, and also after the Russo-Turkish War (which had been ended by the British Fleet forcing the Dardanelles when the Russians were almost at the gates of Constantinople), in spite of all England had done for Turkey she had never asked for anything in return, whereas other nations were always on the look out for an opportunity to grab something.

Passing on to the Dardanelles, Fisher inspected the defences and discussed with the Turkish Admiral the possibility of joint action between the two navies. In conclusion, he asked if the Turkish officer would like any part of the conversation confirmed in writing. The Turkish Commander-in-Chief replied that he wanted no document. 'If a British midshipman brought him a message,' he said, 'the word of a British midshipman would be good enough for him.'

I suggested to Lord Wolseley that he should pay a visit to Mount Athos on our way to the Piræus. This peninsula has always interested me, with its twenty monasteries, the earliest of which according to legends dates back to the third century A.D. No woman or female animal is allowed in the majority of the monasteries, or on their properties. Insects, it is said, are beyond the ban of the Church, and both sexes abound. Two of the monasteries were visited by us, but not the one to which access is possible only by a basket with a rope and pulley, for we were assured that the rope was never renewed until it broke. I think the visit was looked on rather as a failure by the Field-Marshal, who was not particularly interested in Greek or Russian monks. So we did not stay long off the rocky promontory, but left for our next place of call.

During our visit to Athens the yacht lay at Piræus while we went on to the capital and stayed at the Royal Palace, a large barrack-like building. The rooms were furnished entirely out of the pocket of King George I of Greece, formerly Prince William George of Schleswig-Holstein-Sonderburg-Glücksberg—a name considerably longer than his purse!

[1] See page 325.

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In 1863 he was selected by Great Britain, Russia, and France to ascend to the throne. On arriving in Athens he found the palace bare of all furniture and all necessities, and he had to send to a neighbouring restaurant to borrow plates, knives, and forks for his dinner. It is no small financial feat to furnish a palace out of savings from an inadequate income.

The Royal Family when *en famille* lived, during the day-time, in a single large room, half of which was used as a dining-room, and the other half was furnished as a drawing-room. A portion of the latter was screened by trellis work so as to form a smoking-room. The whole arrangement was distinctly homely. It was in this room that we were informally entertained at lunch after the formal reception. We also attended at the Stadium for the presentation, by the King, of the prizes, which were simple palm branches—won at the Olympic Games which had just been completed. We experienced more geniality in our reception at the Greek Court than at any of the four previous Courts, and we thoroughly enjoyed our stay.

The King was well liked, but the Crown Prince, who had married a sister of the German Emperor, was not. The war with Turkey had ended, only two or three years before our visit, in a grave defeat of the Greeks ; as the Crown Prince had been Commander-in-Chief of the Greek Army he naturally incurred considerable odium.

The King, on the other hand, was most popular, for on the conclusion of the war with Turkey, he had been largely instrumental in persuading the Great Powers to bring pressure on the Sultan to reduce his demands. But at the time of our visit the whole country was in a state of unrest and extreme poverty, and was a hotbed of dissension and discontent.

At the conclusion of our stay the Mission broke up : Lord Wolseley leaving to join friends in a yacht, and the remainder returning to England by steamer and overland, for at that time Athens was the only capital of Europe without railway communication with the other European countries.

Little did we foresee the tragedies in which the majority of the crowned heads we had visited would, before long, be

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involved. Even before the havoc wrought by the Great War King Alexander and Queen Draga had been murdered and King George of Greece assassinated by a lunatic in the streets of Salonica, and Abdul Hamid had been deposed. King Carol and Queen Elizabeth died peacefully in their beds. And, as a result of the Great War, the Emperor Franz Josef before his death saw the imminent break-up of the Austro-Hungarian Empire and the ending of the Habsburg dynasty which for six centuries had ruled the destinies of that Empire. Certainly no profession can compare in danger with that of a ruling monarch and his consort: kingship and dictatorship are the most dangerous of all trades. The lives of the holders are lived in the fierce light of publicity; they are held responsible for all actions of their governments, and therefore are fair game for the foul actions of malcontents and lunatics.

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Chapter III

'SUBMARINE BOATS'

ON RETURNING FROM THE MISSION I WAS APPOINTED to the *President* for service with the submarine boats, on which work had already been commenced.

It is most difficult now, after a lapse of thirty-nine years, to reconstitute the atmosphere which surrounded the submarine problem in the first year of this century. The Great War has caused the submarine to be looked upon as a commonplace weapon in naval warfare. In 1900 this was by no means the case. The submarine was then looked on as a low class of weapon, underhand, unfair, and un-English. Moreover, work in a submarine boat was looked on as a most risky occupation. It was known that France had built, and was experimenting with, submarine vessels, but rumour was vague as to the success that was being achieved. At that time the Anglo-French Entente had not materialized. France was still the chief of our potential enemies, so the fact that France was at work on the subject was a strong argument for us to do likewise.

In America there were two types of boats, both built by private firms, the Holland and the Lake. Again little was known as to the real practical performance of these small vessels. The British Admiralty therefore wisely determined to experiment for themselves.

It is interesting, however, to note that considerable difference of opinion existed as to the wisdom of this course. In fact, so level-headed a man as the late Admiral of the Fleet Sir Arthur Wilson, who was then Controller of the Navy, that is, head of the material section of the Admiralty, advocated the policy of trying to abolish all attempts to add submarine boats to the lists of vessels recognized in naval warfare by boldly stating that in war-time we intended to treat all submarines as pirate vessels and to hang their

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crews! This was rather too arbitrary a position to take up, so the other alternative, that of building six boats, was approved.

On taking up my appointment I found that the Admiralty had entered into a contract with Messrs. Vickers, Sons & Maxim to build five boats of the Holland (American) type, and to turn them over to us after trials as complete and efficient vessels.[1] Messrs. Vickers, on the other hand, had contracted with an American firm holding the Holland patents for them to supply the necessary drawings to enable the boats to be built in England, and to furnish sufficient practical experience to enable the boats to be navigated during their official trials.

It is necessary to describe briefly the main features of such vessels in order to render the progress made in these early years intelligible to the non-expert; and I am emboldened to do this since the main principles underlying submarine boat design are easy to understand.

An ordinary boat has sufficient buoyancy to float on the surface of the water; and, if water be allowed to enter, she will sink until she is completely submerged. If, however, she is completely decked over with a watertight covering no more water can, even after she has sunk, enter the boat. If, at any time, the original water is expelled she will once more rise above the water.

This is the principle underlying the submarine boat design. But, for convenience, the water that is permitted to enter is confined in watertight tanks, and not allowed to flow promiscuously about the bottom of the boat. It can be expelled at will from these tanks by means of compressed air.

There is one important point which it is necessary to appreciate. Anything of any sort whatever which is heavier than water will sink when placed in water, and will continue to sink until it arrives at the bottom of the ocean. There is no half-way house. Either it floats on the surface or it rests on the bottom of the sea.

In order therefore to keep a submarine boat floating

[1] Mr. James McKechnie, afterwards Sir James McKechnie, was in charge of the construction of the boats at Barrow. Mr. J. H. Boold was responsible for the hull construction.

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at any desired depth below the surface it must be kept moving, in an exactly analagous manner to that in which an aeroplane is kept from falling to the earth. If an aeroplane stops it will immediately tend to come down to the ground. Nor is the principle of gliding available to a submarine, for gliding is only possible by making use of ascensional currents of air, and there are no ascensional sea currents at all comparable with those met with in the air. We see, therefore, that a submarine must have some form of motive power and be able to steer itself in a vertical plane in order to keep or vary its depth. If the motive power fails the submarine will sink to the bottom unless sufficient water is expelled from its water-tanks to make it once more buoyant in the water.

Another point in submarine construction is that the watertight portion of the hull of a submarine has to be capable of standing considerable pressures. Although water is practically incompressible, the pressure on every part of the hull of a submarine corresponds exactly to the weight of water between it and the surface. This in practice works out roughly at one pound per square inch of surface for every two feet of depth to which the submarine may be submerged. At one hundred feet below the surface the hull of a submarine is subjected to a squeeze of about forty-five pounds pressure on each square inch of its surface.

Electricity is the power selected to propel submarines when below water. There is no air to spare in a submarine. There is only a boat full of air, and it would be most uneconomical from a point of view of weight to store compressed air in cylinders in sufficient quantity to work a combustion-engine. All forms of combustion-engines are therefore out of the question, and electricity is at present the only form of energy available. On the surface, however, the whole firmament can be drawn upon for air, so that any form of propulsion can be used, with one proviso only: namely, that it must not be of such a nature as to cause too long a change from the surface to the submerged condition, otherwise time might be given for an enemy to detect and sink the boat before it could hide itself below the water. In practice heavy-oil engines are now universally used. Petrol engines only were available at the time of which I write, but heavy-oil engines have since been perfected and

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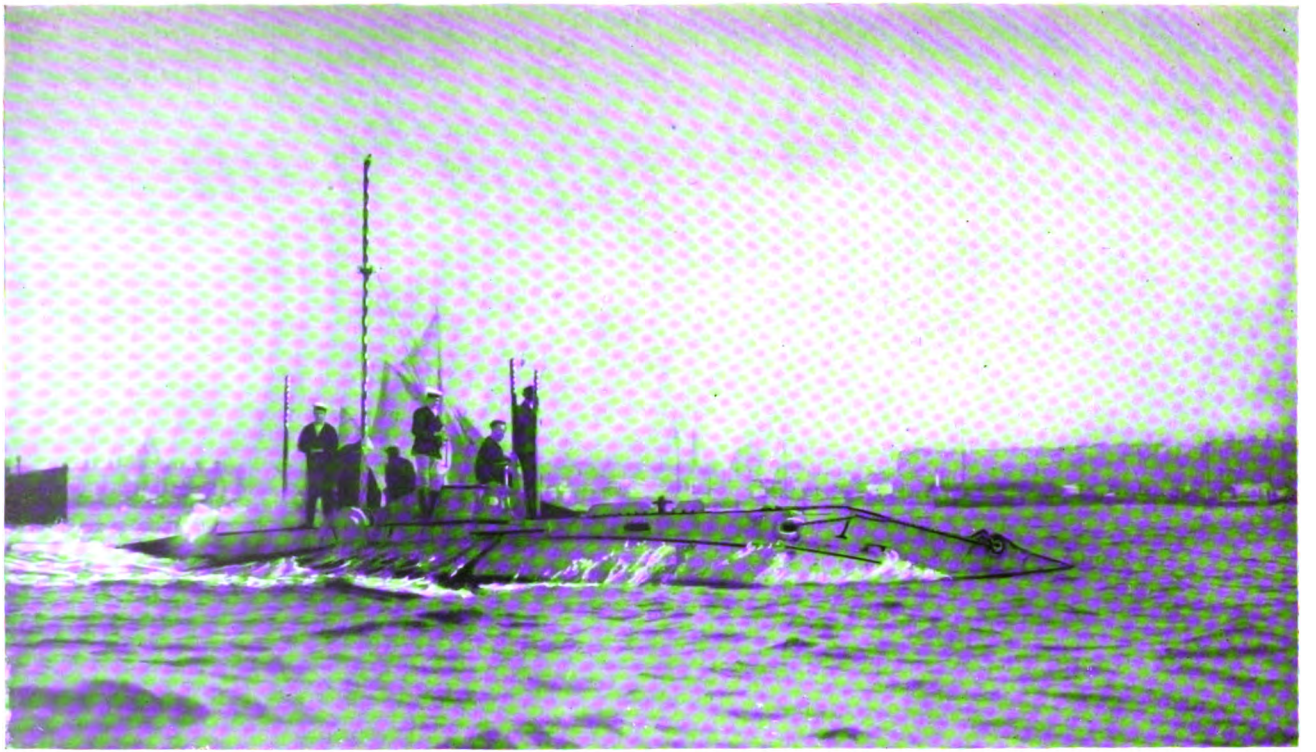

NO. 1 HOLLAND SUBMARINE

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become general. To sum up. A submarine boat is a totally enclosed steel boat with water-tanks and compressed air storage, electrical propulsion below water and combustion-engine propulsion on the surface, with rudders to steer either in a vertical or horizontal plane.

On taking up my appointment I called on Sir William White, the Director of Naval Construction, and Sir John Durston, the Engineer-in-Chief. Both washed their hands entirely of submarines and refused to have anything to do with them. Sir William advised me never to go below water, as he had once made a descent in a submarine in a London dock and had been stuck at the bottom for an hour or so. The Engineer-in-Chief refused to be associated with the problem of petrol engines when worked in confined spaces.

So I took over constructional and engineering control with regard both to design and practical working. This suited me down to the ground.

I subsequently heard the details of Sir William's adventure in the Tilbury dock from another member of the party who were marooned at the bottom of the dock. It happened in January 1887, the submarine being named *Nautilus*, after Jules Verne's imaginary vessel. It is all very well to smile at the occurrence now, but the danger at the time was very real to the occupants; and there is little wonder that Sir William subsequently fought shy of submarines.

It appeared that after the party had partaken of a good lunch the boat was submerged. It went down with rather too much of a bump and stuck fast in the mud. The boat was not fitted with water ballast tanks, but had large cylinders which could be pushed out by mechanical means through the sides of the boat; these increased the displacement and, therefore, the buoyancy. At first these could not be made to move, as the boat was too far down in the mud; and while attempts were being made water was all the time leaking into the boat; so each one of the crew and passengers had, in turn, to work hard at the hand-pump to keep the water reasonably under control. The captain of the boat was suffering from heart disease; and, what with work and anxiety, his heart began to palpitate. I know this was so, as

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when he asked my friend to feel the palpitations, he found they were those of a 40 h.p. pump. The anxiety of all on board was therefore increased by the fear of the death of the only man who knew anything about the mechanical arrangements of the submarine. Fortunately two naval officers were there, my friend and Lord Charles Beresford. These, from experience gained of fortuitous groundings of surface boats, suggested rolling the boat so as to loosen it in its bed in the mud. Eventually, after considerable rolling, they got the water to creep between the hull of the boat and the mud, and up she popped to the surface. It is little to be wondered at that this experience should have given some of the members of the crew a wholesome respect for underwater navigation.

By my appointment I was placed on the staff of the Controller of the Navy and given a room at the Admiralty in which to work and deal with correspondence. This was an enormous boon, since I was at once in touch with all Admiralty departments, and could deal, by personal interview, with all their heads with a minimum recourse to paper work.

I knew nothing about submarines; no more did anyone else. So the first thing to do was to sit down and think out what were the difficulties that we were likely to come across, and arrive at methods by which they could be forestalled. The result was rather peculiar; for all the problems that I originally considered to be likely to be difficult to solve turned out to be simple, and several of those that appeared simple gave, in the end, an infinity of trouble.

The chief difficulty appeared to me to be that of navigation below water. The boats, as designed in America, and as used elsewhere, were blind so far as navigation and attack on vessels in war-time were concerned. These attacks had to be carried out entirely by steering a compass course for a definite time and then rising to the surface.

After considerable thought I hit on the idea of a tube long enough to reach from the boat to above the surface of the sea. If I could get a reasonable field of view and could eliminate the vibration of the tube, I could, from inside the submarine, see objects floating on the surface of the water. Naturally, it would be necessary to place a forty-five

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degrees reflecting prism on top of the tube so as to reflect from the horizontal vertically down the inside of the tube. I soon found that this simple arrangement would give me only a very limited field, and that a wide-angle lens of some description would be necessary in front of the prism. I did not think that magnification would be required, so I copied the arrangement of one leg of a pair of binoculars ; and, in front of the prism, put a double concave lens. I then pushed an ordinary long-distance telescope up the tube and lay on my back and looked up the eyepiece. This immature ' optical tube,' as I called it, was slung on the poop of the *Vernon*, and lo and behold ! I found I had an excellent view of the dockyard and surrounding mud flats.

Naturally it was inconvenient to lie on one's back, so I had a second forty-five degree prism mounted in the draw-tube of the eyepiece so that I could sit in a normal upright position. This was the first attempt at a periscope in England, and I believe the first made in any country. I found that it could not be patented, as there was a surgical instrument of a similar nature for examining a patient's bladder !

One trouble with my tube was that, if I remained seated, and looking in one direction, and then revolved the tube to sweep the horizon, the view as seen through the eyepiece revolved in a vertical plane ; so that, for example, when the lens at the top of the tube was directed at places behind my head the view appeared upside down. This, however, was a minor trouble which could be simply corrected by using a specially constructed eye-piece.

This original tube was fitted to the first Holland boat, and it enabled all her trials, as well as those of the second boat, to be carried out in safety.

Captain Cable (about whom more hereafter), who commanded at these trials, shook his head at its use and at first insisted on using his compass as well. However, he took the drawings with him to America and installed periscopes in all boats built over there. I might mention that the tube was mounted in a large ball and socket joint, which enabled it to be lowered into a horizontal position when not in use.

After the tube had been installed I was introduced by

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Lieutenant Trevor Dawson, the Submarine representative of Messrs. Vickers, Sons & Maxim (as the firm was then called), to Sir Howard Grubb, the eminent Dublin optician. He naturally evolved a better optical arrangement; and, eventually, through a series of improvements, produced the present-day periscope.

The first periscopes made by Sir Howard Grubb gave a lot of trouble. First it was difficult to make the prism chamber at the top of the tube water-tight; and, secondly, if the air inside the tube was not bone dry, the cooling of the tube, owing to the cold water rushing past it when travelling submerged, caused moisture to condense on the lenses and blur the image. To cure this, desiccation of the air had constantly to be resorted to. During manœuvre times with the early boats the captains had often to spend a greater part of their night's rest desiccating their tubes with a special plant supplied for the purpose, so as to be ready for work on the following day.

One of the earliest problems that required solution was the question of air purification. This appeared to me to be one of supreme importance, since the time that a boat could remain submerged depended primarily on how long the air inside the boat could support life. There was, at that time, little accurate data available as to the effect of stale air on the human race. Of course the result of the exhaustion of oxygen and the effect of carbon-dioxide was well known; but, although we know better now, it was then by no means certain that human bodies in close confinement did not give off poisonous exhalations! In this matter we received great help from Professor Dunstan, F.R.S.,[1] of the Imperial Institute, and Professor J. S. Haldane, F.R.S. We at once started to design purifiers to take away the carbonic acid gas, which is the chief deleterious gas in well-breathed air. The only method of testing these purifiers, and obtaining practical and rapid information, was to shut men up in confined spaces for a considerable time, and then analyse the air so as to ascertain how impure it had become. In one experiment we spent a memorable night hermetically sealed in one of the submarines building at Barrow, with a double crew and a trial purifying apparatus. It was a night not to

[1] Now Sir Wyndham Dunstan, K.C.M.G.

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be forgotten; not because of the foul air or purification details, but because the elderly representative of the Holland Boat Company had brought a flute wherewith to while away the time. At the best of times the flute is not an inspiring instrument, but the dirges to which we were treated that night, in the bowels of the submarine, I believe caused us all, ever after, to look on a flute with a large measure of personal enmity.

To test the matter further, I had an air-tight room constructed just large enough to seat four men; this was occupied by four long-suffering officers until the amount of carbonic acid gas rose to what was then considered a dangerous amount. We found that human beings, at a pinch, could put up with considerably more 'stuffiness' than that for which they had previously been given credit. In fact, our experiments showed that under normal conditions of working, foulness of air need not be looked on as a danger; but for prolonged sojourns under water, such as lying on the bottom for considerable periods, both air purification and oxygen supply would have to be resorted to.

Another danger with which we had to cope was that of carbon monoxide poisoning. This gas forms the greater part of the exhaust gases of an internal combustion engine. In order to have warning of an accumulation of this gas we kept white mice captive in cages. Often I have been asked, 'Why white mice?' 'Why mice at all?' 'Why white mice in particular?' 'Why not the ordinary brown variety?' The reasons are simple. Breathing, among other functions, helps to keep up the temperature of warm-blooded animals: moreover, the cooling of the body of an animal is largely proportional to its surface. We all know that a large ball contains a greater number of cubic inches of solid material in proportion to the area of its surface than a small ball. For instance, a ball ten feet in diameter has ten times as many cubic inches of content for each square inch of surface as in the case of a sphere of one foot diameter. Although animals are not actually spherical in shape the same underlying principle holds good. A human being therefore has less skin surface, and therefore less cooling surface, for each pound he weighs than has a mouse. Obviously, therefore, the breathing of a human being needs

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to be very much slower than that of a mouse. Further, the ill effects due to inhaling poisonous air will, of course, show itself sooner with a quick-breathing than with a slow-breathing animal. A mouse will, therefore, exhibit symptoms of being poisoned in a vitiated atmosphere far sooner than a human being. Hence the choice of mice for poison gas detection. Another advantage of a small animal was that it could be kept low down in the boat, well below the mouth of a man, and would thus give ample warning of low-lying poisonous gas. White mice were preferred to brown because they were tamer and more easily handled. The value of this means of detection was shown when occasionally warnings were given by the death of the mice, and the danger of poisoning the crew was thereby averted.

The next trouble I foresaw was want of accuracy on the part of the magnetic compasses. Gyro-compasses had not then been invented. Experience with compasses in the steel conning-towers of ships warned me of the difficulties that would be experienced with compasses inside a steel structure like that of a submarine. It therefore seemed that the right place for the compass was outside the boat with an optical tube leading to the steering position. This solved that particular trouble; but there was yet another: viz., the effect that the variations in the strength of the electric current used for driving the electric motors would have on the compass needles. I felt certain these could be compensated for fairly easily, and this proved to be correct. Unfortunately, on the first day that we tried the compass with power on the motors, the then Hydrographer of the Navy, who was also the technical head of the Compass Department at the Admiralty, came on board the boat. The moment we started the motor the compass card flew hard over and remained oscillating ominously in that position. Before giving me time to investigate matters, he had left for London; and, on arrival, spread the report that compasses in submarines were useless, and navigation impossible. It took years to eradicate this fiction from the minds of naval officers. I continually met men who would say: "Oh, yes, but then your compasses are quite unreliable." As a matter of fact, before my friend the Hydrographer had arrived in London, I had totally eliminated this

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effect on the compass card by the simple expedient of fitting a compensating wire at a suitable distance from the binnacle.

The main and return wires to the motors, being close together, of course compensated each other. The trouble that had cropped up was caused by the current that ran in the aftermost row of secondary cells. Since the cells were joined in series the current zigzagged from starboard to port, and port to starboard, through the battery, the current running through each row of cells was compensated for by its neighbour except in the case of the after row, and this only had to be artificially adjusted.

Now about the engines.

Those in the Holland boats were 120 h.p. petrol motors with an internal mechanical sparking-plug, which latter gave incessant trouble. But the matter regarding these engines which appeared to us to be of the greatest importance was the danger of explosions from the leakage of petrol into the boat. Unless it is absolutely necessary, no wise person likes to work with petrol in a confined space. However careful everyone may be, there is still always the danger of a fortuitous leak, followed by a spark, then an explosion.

Petrol, when freely exposed to the air, is continually giving off an inflammable vapour at all temperatures above freezing-point. This evaporation progresses steadily, converting the air first into an inflammable mixture, then as more petrol evaporates the mixture becomes explosive. After a still further addition of vapour it again becomes only inflammable; and, in the end, when well saturated with vapour it again becomes safe from explosion or burning, but is poisonous to life. An explosive mixture is easily produced by a leak in a petrol joint; nor is it easy to detect that such a leak has developed, since there is always a smell of petrol when an engine is working in a confined space. The nose is the main detector, but this organ is unable to differentiate between a considerable quantity and a small percentage of vapour. Its action is qualitative rather than quantitative.

In a submarine every switch in those days was liable to supply a spark, and these were also being constantly given off at the commutators of the motors. But, at that time, in spite of the danger of explosions, it was absolutely necessary

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for us to use petrol engines, since no heavy oil engines of a suitable nature had been constructed. It was practically impossible to use steam. Steam engines and boilers had been tried in some of the French boats; but, in one case, when bad weather had come on quickly, and the boat had to be closed up in a hurry, the crew arrived in harbour in a parboiled condition. This was quite sufficient to condemn the system. The dangers inherent in petrol had, therefore, to be cheerfully accepted.

There remained one other source of danger from explosions, viz., that due to an electric spark effecting the recombination of the oxygen and hydrogen given off when charging the electric batteries. When nearing the completion of the charge these large batteries 'gassed' considerably. If this gas came in contact with a spark, an explosion was bound to occur. Ventilation while charging was the only preventative.

Of course, we had a few accidents with the boats in spite of all our preventative measures. Submarine A.1 had an explosion of battery gases which fortunately did not seriously injure anyone, but wrecked some of the boat's fittings. Another boat had a petrol explosion through an officer, in spite of the regulation to the contrary, starting the main motor to ventilate the boat to get rid of the smell of petrol; a variation of the old lunacy of looking for a gas leak with a candle.

A peculiar fact emerged from the inquiry into this accident. Evidence showed that the men who were standing forward in the boat distinctly saw the flash of the explosion coming towards them. Those who were standing with their backs, or fronts, facing the advancing wave of fire were thrown with violence for several feet, and suffered fractures and contusions. Those standing sideways were hardly damaged, except for a slight singeing. It is well, therefore, to remember, if ever you see an explosion approaching, to turn sideways to it, and to separate the legs to get stability.

This visible advancing wave is a peculiar feature of explosions. I remember an account of a *poudre B* explosion on board a French battleship in which it was stated that the flame was distinctly seen passing along the paintwork and blistering it off as it advanced. The comparative slowness

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of advance of the front of the incandescent gas gave rise to the idea that it was the paint which, by burning, had spread the fire, a belief which existed for a long time in the Navy. It was nothing of the sort. It was the burning gas travelling onwards which gave rise to the fires.

The above were the main problems which I foresaw would arise in the practical working of the boats. I was further convinced that the Holland boats were too small for sea-going work; and that if submarines were to become vessels of practical value, their size and speed above and below water, and also their sea-going qualities, would have to be increased. These could only be obtained by an increase in tonnage. Therefore, before the first of the Holland boats had been completed, I obtained the sanction of the Controller of the Navy to start the design and manufacture of a larger vessel.

For this purpose, and in order to complete the design in as short a time as possible, Messrs. Vickers, Sons & Maxim set apart, and placed at my disposal, a drawing office at Barrow with two ship and two engine draughtsmen.[1] Obviously it was as well to advance by stages. I therefore decided to instal a 500 h.p. engine, and an accumulator battery of double the capacity of that in the existing boats; and after having obtained the estimated weight of these engines from the Wolseley Motor Car Company, and that of the batteries from the Chloride Electrical Storage Company, the displacement of the boat was fixed not only to accommodate them, but also to allow a good margin of displacement for other improvements. It was hoped to obtain a speed of eight knots below and twelve knots on the surface.

Probably the greatest of all the improvements was the raising of the conning tower to some six feet above the deck. This gave a fairly high position from which to navigate the boat. It raised the officer in control well above the seas which constantly washed over the boat when under way; so that both in fine weather, when the hatch fitted on the top could be opened, and in bad weather, when closed down, it provided a reasonably high position from which

[1] Mr. A. Terney was the chief draughtsman on the boat design. Mr. L. G. McFarlane was the chief draughtsman for the engine work.

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to navigate the boat. Another advantage was that the periscope could pass up through it. This not only supported the tube against vibration, but also gave a greater length of tube above the hull, thus increasing its efficiency. In addition it allowed the periscope to be dropped vertically when housing instead of using the rather clumsy arrangement of the ball-and-socket joint.

Here I must, for a moment, leave the new boat and hark back to the Holland.

I was responsible for the design and installation of the torpedo tubes and their discharge arrangements, so I installed those in ordinary use in the Navy, insisting on retaining the old arrangement whereby the rear door was closed and secured by butterfly nuts, since this formed an ideal automatic safety device should a door be accidentally opened when full of water. The moment a single butterfly nut was eased back, water would be bound to leak out and give warning to the man; meanwhile the other nuts would hold the door. He at once would set up the nut, and no damage would have been done. No elaborate interlocking gear was required. It was purely a case of original design of the door. Had this form of door been adhered to, the loss of the *Thetis* would never have occurred.

The detailed plans of all the internal fittings, and of the controls, were slow in coming from America; and, when they did arrive, I was fairly dumbfounded. The most cursory examination showed that many were quite unworkable. The operations of steering, both in the vertical and horizontal plane, the blowing and flooding of the tanks, trimming, etc., were all designed to be operated by the captain of the boat, a task which even a superman could not satisfactorily accomplish. It is only necessary to quote in detail one of these atrocities. The captain was supposed to stand with his head inside the cupola which formed the conning tower. On each side, level with his ears, was a 6-inch steering wheel, the left-hand one for vertical and the right-hand one for horizontal direction. It was both physically and mentally impossible for one man to operate both these wheels. I pointed this out to Messrs. Vickers and they took refuge behind the American company. I then interviewed the Controller and he took refuge behind

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Messrs. Vickers. In other words, the Admiralty could alter nothing without invalidating their contract with Messrs. Vickers, and Messrs. Vickers could make no alteration without taking the responsibility for the performance of the boat out of the hands of the American company. I have never understood how or why such plans were ever sent to England. I have heard that there was trouble between rival interests in America; but even this could not account for the supply of such absurdly puerile information. Meanwhile I had to sit for three months watching the manufacture of gear I knew to be useless!

As soon as the first Holland boat neared completion, I asked for a gunboat to be stationed at Barrow as a mother ship, and for crews for the boats to be selected. The *Hazard* was commissioned and volunteers for the first crew called for.[1]

Some months before completion, the American company had sent over a representative, who was supposed to be a submarine boat expert, but who, although a very nice man, was absolutely ignorant of submarines and their handling.

At last the day arrived when the boat was to make its first passage below water. The crew went on board and we all took our places, and our American expert took charge. The tanks were flooded, and then a most providential thing occurred; the boat gradually stood right up on its tail and everything on board and some of the crew slipped down to the after end of the boat. Nothing could have been better from my point of view; for, as soon as the boat was once more on the surface, I went to London and told the Controller that it was simply courting murder to carry out the trials with the boat in her then condition; and with no one on board who had any real knowledge of submarine work. This fairly brought matters to a head; and, as a result, Messrs. Vickers called on the Holland Boat Company to send over a trained crew. With this demand they complied, and one was sent with Captain Cable in command.

On his arrival at Barrow-in-Furness he at once turned out of the boat all the gimcrack fittings to which, three months before, I had taken objection. He separated the vertical from the horizontal steering, putting each in charge

[1] See Appendix I.

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of a separate operator, thus leaving the Captain free to look after the navigation of the boat. Moreover, the steering-wheels were made of a reasonable size for the work they had to perform, and a large-size depth gauge and spirit level were installed close to the man responsible for the depth steering, two adjuncts which were absolutely indispensable. Captain Cable was even more astonished than I had been to find that such impossible drawings had been sent from America.

In these early days, when extreme care was necessary in order to ensure that no accidents occurred, we were most fortunate in being trained by Captain Cable, who was a thoroughly sound and careful captain. His favourite remark was that: 'He did not go down in submarine boats for his health,' and so he took no unnecessary risks. After training our first crew and passing the first boat, he and his crew left for America, carrying with them our cordial regard. Another thing that he took back with him was a firm belief in the periscope for submerged work.

During our early training and trials I worked the lateral steering, using the periscope, while working nominally under his directions; and, as the trials progressed, he gradually abandoned the compass and trusted solely to the optical tube, as it was then called.

As soon as we began practical work at sea we experienced a diversity of troubles. The petrol engines which had been sent over from America behaved worse than anything else, chiefly owing to the fact that the sparking plugs were mechanical, giving a 'break' in a high-tension circuit inside the cylinder. But there were many other failures; in fact, so many were the minor troubles and breakdowns, that I came to the conclusion that we would never make real headway until I had taken the boat away from Barrow and from the fathering care of Messrs. Vickers' works, and made the crew themselves do as much of the repair work as was possible and thus learn to keep the boats efficient by their own labours. As soon, therefore, as the second crew was sufficiently practised, I took the two first boats to Portsmouth.

Our first sea trip was full of adventure. Just after we got clear of the entrance to Barrow both boats broke down, and I had to anchor more or less in the open and get them

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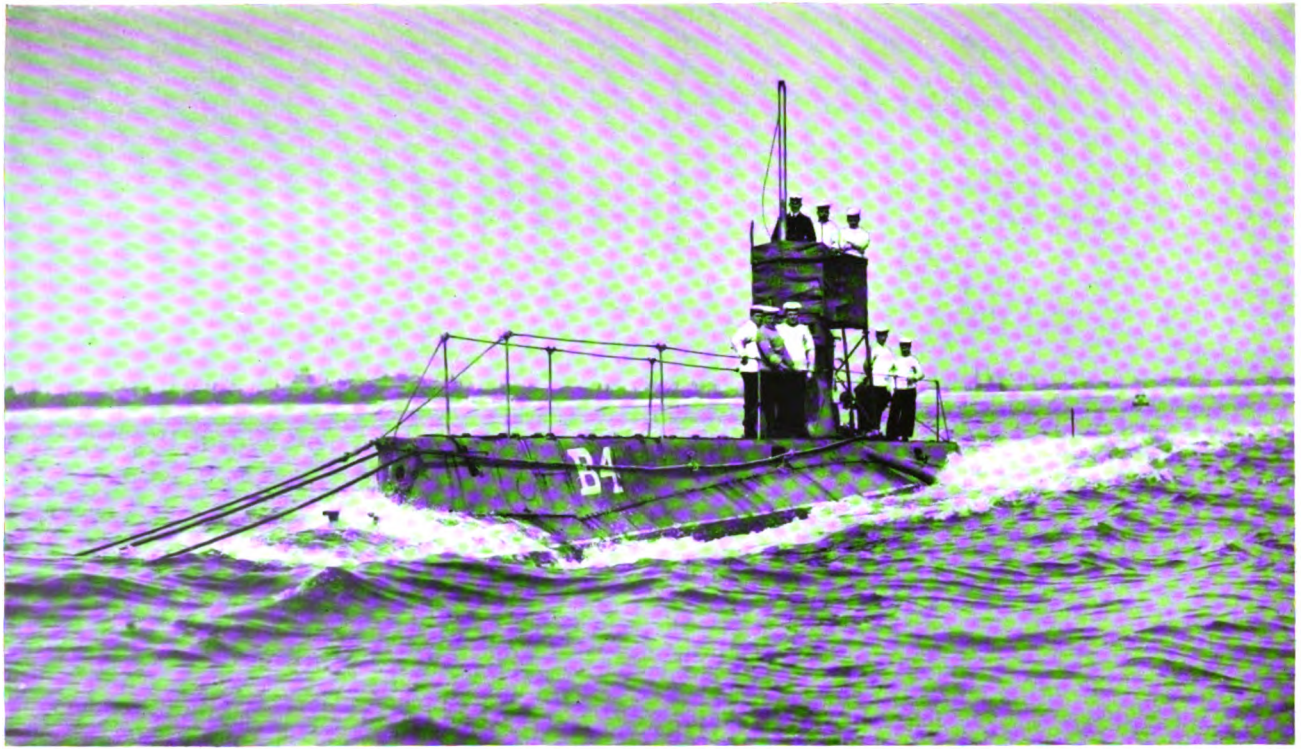

H.M. SUBMARINE B 4

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alongside the *Hazard*, where they bumped all night. We had a lively time that night trying to prevent the boats damaging themselves or the *Hazard*. After several more breakdowns I had to tow the boats practically all the way to Portsmouth. When the remaining three boats had passed their trials I brought them round the coast also.

Minor excitements likewise occurred on this passage; as, for instance, when we arrived in Holyhead harbour, and I was informed that one of the boats, which had been towed for the greater part of the passage, showed no signs of life. The Captain of the torpedo boat which had towed her sent a man on board to shake up the crew, but he could get no response to his knockings. When this was reported it seemed to me to be probable that the whole of the crew had been suffocated, so I took a party, with sledge hammers and tools, to break the boat open. Soon after we had started the blows with the hammer a sleepy person opened the hatch of the submarine and asked what we wanted. Evidently the close air of the submarine had had a very drowsy effect on the crew. It was an intense relief to find that all was well; but it was jars of this nature that prevented the early work with submarines from ever becoming monotonous

A short time after all five of the Holland boats had been brought safely round I took them for a surface run, hoping to circumnavigate the Isle of Wight; which, after all, was not a very ambitious cruise. Owing to various causes three broke down before we got past the Spit Fort, that is only four miles from the start; and only one got as far as Cowes! Truly at times the game seemed hopeless. However, with patience and dogged hard work we slowly eliminated the causes of failure, and the Captains gradually managed to get their boats into an efficient state.

Another experience was far more trying. I had arranged that certain Lords of the Admiralty should come to Spithead to see the Holland boats attack the *Hazard*, as we had progressed well in our practices, and there were several doubting Thomases among the higher powers whom I wished to convert. Of course, I rehearsed the programme carefully beforehand. Each boat was given a position at which to submerge and a direction from which to attack the ship. I had to be super-careful, as Spithead is not an ideal piece

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of water for submarine work on account of the strength of the tides, and the shoals which flank the deep water, as well as the fairly considerable amount of shipping that usually frequents the Solent.

Everything went off well; four boats attacked and not a sign of any of them was seen by anyone until they rose to the surface close to the *Hazard*. But where was the fifth? Of her there was no sign. Half an hour passed, an hour went by and still no sign. It looked as if for some reason or other she had gone to the bottom and stuck there. Reluctantly I had to take the *Hazard* back to Portsmouth as My Lords had to return to London; and a doleful party we were! However, on the way back I got a signal to say that the fifth boat had turned up. Her captain was a splendid fellow; but, instead of doing what he was told to do, he had taken up a position considerably further to the eastward, near to the spot where he thought the *Hazard* would turn after completing her run, and from which place he hoped to bring off a spectacular attack while she was turning. We, however, never went near the place at which he assumed we would turn; so his zealous cunning did not reap any reward but gave us all a very unpleasant time, and rather confirmed my doubting Thomases in their opinion of the risky and doubtful nature of submarine work.

My chief aim at this time was to give the boats plenty of work, but I did all I could to instil into the minds of the captains the necessity of abstaining from taking risks of any sort. After a year or two, when we had learned all there was to know about submarine work and had gained experience, then would be the time for taking risks. But in those early days we were, so to speak, groping in the dark. There were so many things that could go wrong, so many accidents that might occur, which, in time, might be prevented by safety devices, that in the early stages extreme caution was necessary. We were learning to walk, one day no doubt that walk would develop into a run. Moreover, the attitude of the official mind was one of lukewarmness, and general scepticism as to the reliability of submarine boats. Any accident would have given an opportunity for the ignorant to revile and say "I told you so."

Humanum est errare. The human brain is indeed a

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fallible piece of mechanism. I suppose that every naval officer and a good many civilians have in their lives come across accidents that have been due to failure of the human brain fully to appreciate a situation. Admiral Sir George Tryon's action which led to the loss of the *Victoria* is a classic example. It therefore behoved me by design or precept to do everything possible to minimise such chance accidental happenings. If a mistake is made by one of the crew of a ship little harm results, but a mistake in a submarine probably causes a disaster.

I looked on myself as being a fairly careful person. Yet on one occasion I dived the boat with the conning-tower lid not locked, which it was my business, as captain, to have closed securely. I got a ducking for my carelessness, and we took quite a lot of water into the boat before she once more rose to the surface. On another occasion I forgot the periscope was up, and thinking that it was lowered, nearly upset one of the boats when passing under a bridge in the Barrow docks. So it is little wonder that I preached care. In fact, I had a brass plate engraved with the famous and ever true statement, 'No one of us is infallible, even the youngest,' and had the plaque passed on to the boat whose captain had most recently offended. But the captains were a splendid lot, and so were the crews. Though, doubtless, they looked on me as too cautious and slow, they loyally did all they could to curb their adventurous natures and to carry out my instructions.

We had no serious accident with any of the Holland boats, though we occasionally were near to having them. On one occasion, I remember, when at Spithead, I was outside on the deck with the captain, who was conning the boat, which was being steered from down below. A Ryde steamer passed, so, to prevent the wash going below, we dropped down the lid of the conning-tower. It happened that the ventilators were not open and the petrol engine was working. When we tried to open the cover again we found that we could not do so as the engine had exhausted the air in the boat sufficiently to keep the lid closed against our endeavours. Meanwhile the boat was steering straight for the Spit Fort. We had no means of attracting the notice of the man who was steering, and it was only from the fact

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that the engine slowed up for want of air that the attention of those inside was called to the fact that something was wrong, and the ventilators and conning-tower were opened in time to prevent what might have been a very awkward accident.

The comparatively small capacity of the Holland boats compared with the air requirements of the petrol engine was also shown whenever Lieutenant Moreton, one of the best of the captains, but a man of ample proportions, descended the conning-tower hatch. The suction inside was apt to draw him down like a cork, and, as we used to tell him, almost with a 'pop.'

However, I must return to the design of the new boat called A.1, or the first of the A class.

The 500 h.p. engine for this boat was designed and made by the Wolseley Motor Car Company, but, on its trials, it only developed 320 h.p. This low horse-power was due to the small size of the inlet and exhaust valves, which limited the speed of revolution of the engine. Naturally, the Contract Department at the Admiralty wished to reject the engine, or at all events to fine the Wolseley Company. To this I strongly objected, and carried my point, pointing out that the design was of the nature of an experiment, no such horse-power having been previously aimed at for a petrol engine. I was particularly anxious to create confidence in the minds of the contractors, and so to encourage them to experiment and take risks; which most certainly they would not have done if they thought that fines and rejections were lurking in their path. It was, however, a great disappointment to me, since the boat could only obtain about ten knots instead of twelve knots, as proposed. Still, she would still make a good experimental platform. At once a new design of boat was put in hand and the construction of five boats started, the engines being redesigned and made at Barrow-in-Furness.

The most anxious time of my life was the autumn of 1903 and the early spring of 1904, while the new engine was undergoing its trials. To design a petrol engine of 600 h.p. was a great step forward as well as one in the dark. The highest powered light-oil engine hitherto constructed, except the one for A.1, which had developed 320 h.p., had

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been only 120 h.p. In fact, some six weeks after we had a 600 h.p. engine working in the boats the late Sir John Thornycroft, who was in the first rank of British engineers, remarked in public that he understood that shortly a 150 h.p. petrol engine would be on trial, and that it would be very interesting to see how so large an engine behaved!

We expected trouble, and we got it; but I was not prepared to find that the engine would be over six months on trial before we were able to make it behave satisfactorily. Such, however, was the case: hot bearings, scored liners, red-hot pistons, fouled sparking-plugs, burnt-out plugs, white-hot induction-pipe, all came along. As soon as the engine ran for one hour one set of troubles arose, which had to be dealt with, and required days of experimenting, after the second hour a new lot arose, and so on for the third and fourth hours. The causes of our troubles seem very simple now, but then they were obscure, and it was not until after we had abolished the jet carburettor and injected a measured amount of petrol into the carburetting chamber that we got good results. Then, as a last kick, when we took out the butterfly valve for regulating the quantity of mixture admitted to the engine, which we had found to be an unnecessary adjunct, the engine stubbornly refused to work. The reason was peculiar and unforeseen, namely that the petrol on admission impinged on this obstruction and was, therefore, to a great extent atomized by it; without this fortuitous dash-plate the petrol was sprayed insufficiently to allow of rapid carburization.

This six months was to me a nightmare. Day after day, night after night, week after week, month after month, trials went on with failure succeeding failure; in fact, every conceivable evil was in turn encountered and had to be eliminated. All the time the hulls of the boats on the stocks were growing and being equipped with other machinery, and still no engines. The Controller of the Navy[1] was a monument of patience. Of course, I invariably cheerily informed him all would come well in the end, and he accepted my statement. Had I been cursed with a fussy man as Controller, life would have been intolerable. As it

[1] Rear-Admiral W. H. May, afterwards Admiral of the Fleet Sir William May, G.C.B.

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was, I was torn in half between Spithead and trials with the boats, and Barrow and trials with the engine, with its failures always in the background of my mind. Often night after night, as well as day after day, were spent in trying out new suggestions and devices, until at last success was achieved. The engineering staff of Messrs. Vickers, especially Mr. Charles G. Robertson and Mr. J. P. Clear, deserve every credit for the energy and time they devoted to the trials, and I am sure that they were as much relieved as I was when they came to a satisfactory end.

It would have been a terrible fiasco and a bad let-down for my chief, the Controller, had these A submarines been completed in all respects except for the main engine, and had that important item in the end proved to be a complete failure.

During these trials I had been keeping my eyes open for any signs of a successful heavy-oil engine, and on one occasion I visited the works of Messrs. Hornsby, where I had heard that a stationary horizontal engine had just been completed. I found, however, that its weight per horse-power was far too great for use in the boats.

Rather an interesting thing occurred. On the completion of the trial the fuel supply was cut off, but the engine refused to stop ! It looked as if perpetual motion had at last been discovered. It, however, turned out that the engine was running on its lubricating oil, a superabundant supply having been on tap during the trials.

In the meantime submarine A.1 was giving trouble. Originally it was intended to fit her with an adjustable-pitch propeller, since the petrol engine was intended to develop 500 h.p. at 650 revs., while the motors developed 250 h.p. at 800 revs. The technical difficulties attending the practical working of such a propeller led to its abandonment, and we had to design a propeller of the best dimensions to be a compromise between the two desiderata.

Then came the explosion of battery gas in her batteries. At last we pushed her out of Barrow, with the *Hazard* as a chaperon in a reasonably efficient condition.

When nearing Land's End the weather became nasty; and, as I was none too confident as to the reliability of her engines in bad weather, I took her in tow. We came in for

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a moderate gale, but unfortunately an old swell left by a previous blow was running at right angles to the wind. As I had to heave-to for fear of parting the towing hawsers, that night became one of considerable anxiety; for, when the *Hazard* was hove-to head to wind, the sea on her beam caused her to roll forty degrees each way; and when hove-to head to sea A.1 forged ahead and threatened to ram the *Hazard* under her counter. Of the two evils that of the *Hazard* and the submarine rolling was the lesser; so we rolled and she rolled, and we all spent a most uncomfortable night.

At daybreak the submarine reported chlorine gas in the boat from salt water having found its way into the battery, so I ran into Penzance and found that, owing to A.1 rolling during the night, nearly every plate of her electrical storage batteries had broken away from its bridge. Salt water had found its way below through the conning-tower, and the atmosphere inside the boat was a mixture of air, oxygen, and hydrogen, with a flavouring of chlorine. The crew had had a poor time. However, it was all good experience. The Chloride Company redesigned the accumulator batteries and improved the method of supporting the plates. So out of our trouble, which at the time seemed great, valuable experience was gained for the boats that came after; and, in the end, I had good reason to bless that anxious night and the gale of wind.

All the improvements suggested by the trials of A.1 entailed increases in weight; these, of course, the succeeding boats would have to carry. The engines proved heavier than was expected, so it appeared that their designed displacement would prove to be barely sufficient. The question of weight in those days was a bugbear, our margins in this respect were so small. Now, in these days our boats of large tonnage have actually to carry dead-weight ballast; but in the smaller boats of which I write every pound had to be considered. I remember spending three days in the drawing office reducing the designed weight by half a ton, snipping bits off the stanchions and upper works, odd angle-irons, and all portions where economy could be effected without loss of safety or efficiency.

They were laborious days, weeks, and months at Barrow,

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wrestling with difficulties, interlarded with running trials and exercises at Spithead.

As our experience with the boats grew it became evident that a still larger tonnage would be required to accommodate all the improvements and additions which we were finding to be necessary. A new design, that of a B class boat, was therefore started.

Our tactical exercises brought home to me the fact that it would be a great advantage if submarines were armed with a gun. A design was got out, and I asked the Admiralty for permission to mount one in the B class boat. The Controller was willing, but he told me that the First Sea Lord[1] was strongly opposed to the introduction of a gun armament in submarines. I therefore interviewed this high official and explained to him the reasons for my suggestion. He had no argument to advance against the gun, nor did he give any reason for his objection; he merely stated that as long as he was First Sea Lord the submarines would not be provided with guns. It was a modern inversion of the King Canute fable; and, as after events showed, his refusal was unable to stem the progress of events.

This arbitrary decision incurred the danger of our submarines being inferior in defensive power to those of other countries. I never yet have understood the temperament that is capable of issuing *ex cathedra* edicts of this nature.

One improvement introduced into the B submarine was a pair of adjustable horizontal rudders at the bow end of the boat. I intended that these could be given an inclination 'down,' so as to force the bow under when the boat was required to dive. When under water the ordinary horizontal rudders would do the same for the tail end of the boat, and the result should have a stabilizing effect on the depth-keeping of the boat.

Throughout my time in charge of the submarines I recognized the necessity of pushing on the design, manufacture, and practical trials of the early design of boats as quickly as possible. To obtain this end it was most necessary to have wholehearted co-operation between Messrs. Vickers, the constructors of the boat, and myself, not only as repre-

[1] Admiral of the Fleet Lord Walter Kerr, G.C.B.

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senting the Admiralty, but also as being the possessor of the practical experience gained in our trials and manœuvres. Therefore, with the consent of the Admiralty, I concluded an agreement with Messrs. Vickers whereby every new idea was made the subject of a secret patent which was taken out and owned jointly by the Admiralty and that firm. The patents, therefore, became the property of both parties, but Messrs. Vickers could not use such patents without the Admiralty's consent. In this way all jealousies were eliminated. I saw it would be impossible to fix the authorship of an idea when discussions were daily taking place over the details. An idea might originate with one person, but the improvements which made it workable might come from another. Squabbles over authorship would only lead to rankling and secrecy, instead of frank co-operation.

It was necessary to take out secret patents in order to prevent outside inventors patenting what we had already devised; and so to guard the Admiralty from paying royalties for what was really their own property, and by the method of secret patents the information was not spread broadcast. It was recognized that this close co-operation gave Messrs. Vickers a great advantage in manufacture over other firms, but this had to be accepted as part of the peculiar conditions under which we were working, and to push rapidly forward our knowledge of submarine warfare; and if in the future the employment of other firms to build submarines became necessary, the matter was one which could be settled by negotiation.

During 1904 the Admiralty approved that manœuvres should be carried out between the submarines and the Home Fleet under the command of Admiral Sir Arthur Wilson. It was he who, as I have recorded, suggested that submarine crews should be hanged. He was out and away our finest Admiral afloat at that time, a man of ruthless tenacity who was determined to do his best to try out the value of submarines. We had at the time only the five Holland boats and the A.1 available for the test. The Home Fleet was stationed at Portland, and the manœuvres took the form of an attempt on the part of the Fleet to force a passage to the east of the Isle of Wight towards the Nab Lightship. The manœuvres lasted for five days, during which time we sank

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two of Sir Arthur's ships and for the first four days suffered no casualties.

We had great fun on the first day, for we literally strewed the offing with dummy periscopes which gave a lot of hunting and disappointment to the enemy destroyers. They soon tumbled to the fact that the dummy periscopes gave no 'wash,' as would have been the case had they been travelling through the water. So next day our dummies were fitted with beautiful streamline collars painted white.

One boat, with Lieutenant Cromie[1] in command, nearly brought off a successful surface attack in the evening when the enemy was not particularly on the alert. The battleship he was attacking sighted his submarine only just in time to move off at full speed and avoid being sunk.

What I should have liked to have done would have been to have taken the boats off the entrance of Portland Harbour and attacked the Fleet as it came out; but the distance was just too great to be covered by the boats during the dark hours. Nor could they start in daylight, for it was certain that any submarine leaving the Needles in daytime would have been reported by the coastguard stations and the fact would have become known to the Home Fleet. There was, moreover, but little time for the boats to refuel and recharge after the day's manœuvres were over, and then to cover the considerable distance between Spithead and Portland.

Alas! the last hour of the last day brought disaster. I had been keeping the A.1 in reserve, and, seeing a chance for her to bring off an attack against a second-class cruiser, I signalled to her to dive and carry out the attempt. Unfortunately a 15-knot merchant ship was passing the Nab Lightship some three miles away. It was a cruel piece of bad luck that the course of the two should have led to a collision, but such was the case. The submarine, using of course only her periscope, and with her attention fixed on the attack, never saw the fast ship coming up on her quarter. The ship similarly could not see the submarine. A matter of ten seconds early or late in the diving of A.1 would have saved the disaster. The result was that the A.1 was overrun, her conning-tower was struck and grazed along the bot-

[1] This officer was murdered during the War while acting as British Naval Attaché at Petrograd.

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tom of the ship and its top thereby distorted. The lid was not actually forced open, but a crack between the lid and its seating was formed which allowed water to enter the hull more quickly than the water could be blown from the tanks, and so she sank to the bottom.

This was a very grievous loss, especially as I had picked the crew from the best men I had under my command. Mansergh, the Captain, was one of the best of my captains of the boats ;[1] indeed a great loss to the submarine service. Sub-Lieutenant Churchill was a most promising lad ; in fact, all the crew were splendid fellows.

I had no idea that the disaster had occurred until I assembled my vessels at the conclusion of the day's manœuvres. Then the A.1 could not be accounted for. So I steamed back over the route she had last taken, and soon came upon the tell-tale bubbles which showed only too clearly the fate that had overtaken her. There was absolutely no chance of saving any of the crew ; the volume of the bubbles indicated the quick rate at which the hull was filling.

The dockyard sent lighters the next day and attempts were made to sling the boat, but the swell snapped the hawsers, and it became evident that it was necessary to expel the water from the hull before lifting could be accomplished in a position open to the swell that is so common in the English Channel. This melancholy task was quickly undertaken with the aid of a properly equipped salvage craft. Our attempts were complicated by the bad weather that insistently dogged us. The conning-tower was made water-tight by means of cement, a hole was blown in the bilge of the submarine ; and the water was expelled from the boat by means of compressed air. Slinging proved difficult ; so in future lifting bolts were fitted to the submarines. The boat was, after a month's work, raised and towed into dock.

People who have never dealt with submerged salvage work in strong tides cannot have any real conception of the difficulties and disappointments attending such operations—divers must be employed, the hardness of whose task increases greatly with the depth of the water and the

[1] It was he who gave us such a fright by his initiative in the earlier manœuvres. (See page 66.)

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strength of the tide. It must be appreciated that a diver has to be supplied, within his dress, with air of a slightly greater pressure than that exercised by the surrounding water on his body. He is, in fact, an air-bag—hence he must carry heavy weights on his back and chest and be provided with heavy leaden soles to his boots so as to prevent his being blown up to the surface of the water. In a tide-way this human gas-bag is largely at the mercy of the tide and a man must hold on tightly to some support if he is to prevent himself from being swept out like a streamer in the current. Little work can be done under such conditions. In the ordinary waters near our coasts, two hours perhaps at neap tides, and one hour during slack water at spring tides, are the only times in which a diver can do useful work.

The next difficulty arises from the rise and fall of the sea and swell. Hawsers which may be amply strong enough to stand the dead weight of the vessel to be lifted, will snap like pack thread if subjected to the ' whip ' caused by ropes tightening suddenly as the lifting camel rises in a seaway. A piece of stout thread that cannot be broken when steadily strained between the hands can be easily snapped by a jerk. The hawsers, therefore, can be tautened only in calm weather and smooth water ; while, in bad weather, the whole salvage plant is often obliged to leave the wreck and seek shelter in a harbour.

Salvage work is indeed a matter requiring infinite patience as well as consummate skill.

In the case of a submarine, holes must be bored or blasted in the under side in most of the compartments and air pressure pumped into the vessel in order to expel the water and give her buoyancy, thus lightening her dead weight. It is extraordinary how many small leaks develop which allow air to pass when pressure is applied inside a hull.

It is easy to appreciate how methodical must be the preparations and how slow must be the progress of salvage work such as that undertaken in the case of the *Thetis*. The salvage of the comparatively small A.1 was a far simpler operation than that of the much larger vessel ; but, even so, it was by no means an easy task.

In those early days the small tonnage of the submarines

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did not allow weight to be devoted to the carriage of salvage appliances. The vessels were built to fight and this primary object had to be satisfied before salvage could be considered. Moreover it was difficult to imagine any accident happening to a submarine (which was not sub-divided into water-tight compartments) which would prevent her rising to the surface, unless water was entering her hull at a greater rate than the water was being expelled from the ballast tanks. In such a case the hull would fill too rapidly to allow any reasonable chance of saving the lives of the crew.

It would be ungracious not to mention a few, at least, of the officers who joined the Submarine Service during my tenure of command. Names that leap to my memory are those of Lieutenants S. Bowles-Evans, A. H. Quicke, and J. A. Moreton. Alas, all have since died, the former as a Commander and the two latter as Captains. They were amongst the earliest of the pioneers. Then there was Lieutenant M. F. Sueter, afterwards, as a Captain, Director of the Air Department at the Admiralty. He is now Rear-Admiral Sir Murray Sueter, M.P. for Hertford. One of the very best was Lieutenant C. J. C. Little, now Admiral Sir Charles Little, Second Sea Lord of the Admiralty. They were men who left their mark on all the work they took in hand.

On the engineering side I must refer to Engineer Robert Spence, afterwards an Engineer Captain. He did invaluable work, both as one of the complement of the first submarine and as engineer inspector of later boats when under construction.

The names of Petty Officers William R. Waller, F. C. Knight, and Joseph B. Rees, and of Engine-room Artificers William J. Robinson, and William Muirhead, should also be mentioned.

Towards the middle of 1904 I began to agitate to be appointed to a sea-going command. The A boats were proceeding well, all difficulties having been cleared up. The B boat was progressing, and I had turned over the design of the details of this submarine to Commander Edgar Lees, who I knew would succeed me in command of the boats. So there was nothing to keep me from going to a sea-going ship.

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I might write a whole book on the early submarine work, the commissioning of mother ships, the taking over of Fort Blockhouse, and much more. But enough has been said to show that although the early days were not plain sailing, by the end of 1904 sufficient progress had been made to provide a sure foundation for the vast improvements which the brains and hard work of my successors were destined to introduce into the design of submarine boats and their practical work at sea.

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Chapter IV

NAVAL OFFICERS AND NAVAL EDUCATION

TOWARDS THE END OF THE SUMMER OF 1904 SIR JOHN Fisher informed me that he was to be appointed First Sea Lord of the Admiralty later in the year, and asked me to go as his assistant. I replied that I was much honoured by the suggestion, but that I considered that I ought to go to sea in command of a cruiser. I pointed out that already, for four years, I had been away from our large fleets in command of the submarine boats; and, although that appointment entailed more sea work than usually fell to the lot of a captain of a ship; and, further, that although, technically, my appointment as Captain of the *Hazard* enabled me to count my services as sea time towards promotion, yet I ought to command a larger ship at sea, otherwise my employment after promotion to Admiral might be jeopardized. He swept away these objections and promised that he would only keep me at the Admiralty for one year. I then stipulated that if I went I should have a definite appointment as his Naval Assistant. The Controller of the Navy already had such an assistant and I considered that the First Sea Lord ought to have one also. Moreover, unless I had a definite and recognized post, I would be placed in an anomalous position and be without defined status at the Admiralty. So, in the end, I went to the Admiralty on 21 October 1904 as Naval Assistant to the First Sea Lord and spent a busy time for the next year.

As I have already pointed out, Sir John had been for the previous four years collecting the opinions of a large number of naval officers who held advanced views, and had been digesting them and gradually coming to a decision that certain reforms were in his opinion necessary. Already, as Second Sea Lord, on his return from the Mediterranean, he had obtained the consent of the Board to his new scheme for

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the entry and education for the naval cadets. With this, so far, I had had nothing to do, but I thoroughly agreed in principle with the alteration though perhaps not with all the details.

The reasons that necessitated an alteration in the existing system were :

First, the growing importance of machinery in the Navy and the consequent necessity for the executive officer having practical knowledge of engineering ; and secondly, the advisability of a boy finishing the major part of his mathematical education before going to sea, thus leaving him free to learn his work as a practical seaman without having the greater part of the day devoted to theoretical studies.

In order to explain this second desideratum, it is necessary to say a few words about the method of entry of cadets and the condition of education in the Navy prior to 1902.

Prior to 1900 a boy wishing to become a naval cadet received a nomination from the First Lord of the Admiralty. This was desirable in order to make certain that the boy's parents were sufficiently well-to-do to pay to the Admiralty the allowances that were necessary until the lad became a commissioned officer ; also the executive branch of the Navy had always been officered by sons of gentlemen, and it was not considered desirable to throw the entry open to all classes of boys. Whether this restriction was or was not advisable may be a matter of opinion, but the Navy itself, and especially the lower deck, was entirely in favour of the selection of candidates. That there were individuals of humble origin socially who would have made admirable officers is without doubt ; but the Navy had always been, more or less, an aristocratic service ; and, taking into consideration the varied duties, diplomatic and social, that fell to the lot of the higher ranks of that Service, the peculiar attributes that came from polite upbringing were often of considerable value to the country. Further, the education of the men on the lower deck prior to that date was considerably inferior to that of the present-day sailor.

There was also reason to fear that if the social status of those entering was too greatly lowered, then the prestige attaching to the Executive branch of the Service would be

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similarly reduced, and men of social position would no longer send their sons into the Navy, but prefer to place them in other walks of life.

As I have already said, the matter can be looked at from entirely opposite points of view; but, in the Navy itself, the feeling on this matter, at that time, was very strong indeed.

After receiving a nomination the boy had to present himself before the Civil Service Examiners and pass a competitive examination. If he was successful, he joined H.M.S. *Britannia* at Dartmouth and went through a two-years' course which included elementary mathematics, navigation, and seamanship, French and sundry other subjects. He then joined a sea-going ship in which there was usually a naval instructor, and for another four or five years carried on a spasmodic education. During these years his ship duties, as well as his own inclination, were always at loggerheads with his school training; so that it is safe to say that the majority of midshipmen gained little increased theoretical knowledge during this period of their sea service.

Speaking from my own experience, out of the four years and three months that I was a midshipman I was without a naval instructor for six months; I was shot while out shooting and, as a result, was ill for nine months; and, for a further six months, I was with a naval instructor who was incapable of dealing with midshipmen; so I was without adequate instruction for one year and nine months. If I had spent six months more in the *Britannia*, steadily at work, I should have learned far more than during the whole time I was at sea.

After a midshipman had completed his time of service in that rank, he passed an examination in seamanship and went on to Greenwich College for a nine-months' course. He then moved on to Portsmouth, where he studied in turn gunnery, torpedo work, and pilotage, passing an examination in all these subjects. His education was then considered to have been completed, unless he chose afterwards to enter one of the specialist branches of the Service.

It was absolutely needless to spend time in teaching those officers who were not likely to specialize in any of the more scientific branches of the Navy, elementary algebra, statics, kinetics and kinematic hydraulics and other mathematical

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subjects. These were of no more use to a general service naval officer than to a parson or stockbroker. I will quote one example to show the stupidity of the regime:

One sub-lieutenant in my class, quite a promising officer but with no mathematical ability, failed to grasp proficiently so simple a matter as the solution of a quadratic equation, yet he was hurried on to a course of kinetics and kinematics. These subjects were, of course, complete gibberish to him. Only those officers who had specialized in gunnery or torpedo work were likely ever to use the knowledge that had been crammed into them at Greenwich. One subject should be excepted, namely Navigation, but this had already been studied by the midshipmen while at sea.

It will be seen that the education of the youngsters was scrappy and disconnected; and, so far as the course at Greenwich was concerned, a youth was mainly occupied in acquiring knowledge merely in order to pass the final examination. Such crammed knowledge was, of course, of no permanent use to at least 80 per cent of those who went through the prescribed curriculum.

One of the objects of the new scheme therefore was to give the boy a continuous course of four years at college before going to sea, since it was considered, and rightly considered, that he would learn and remember much more by so doing than he would from desultory working under the old system.

The other condition which underlay the proposed reform was the growth of mechanism in the Navy, and consequent discontent of the engineering officers at their status on board ship. An explanation of the causes of this discontent requires rather a lengthy digression.

The Royal Navy at its birth was largely an offshoot, or rather a development, of our Merchant Navy. The King had a call on certain ports to supply ships; and, in cases of national need, ships owned privately joined together to fight against a national enemy.

Fighting in the old days was largely a hand-to-hand affair; it was, therefore, not unreasonable to find that the fighting men who were carried on board ship were usually commanded by a military officer, while the actual sailing and manœuvring were carried out by professional seamen.

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Gradually the fighting officers and men remained at sea and became sailors by trade; but the old system long continued in a modified form. Even during the last quarter of the nineteenth century ships still carried a special branch of officers whose duty it was to navigate the ships. But these were also permitted, when necessary, to take command of the ships in which they served, although they never rose to flag rank.

Three other classes of professional officers besides the Executive and Engineers were carried at sea; the Paymaster Branch, who were accountant officers and were more or less the modern successors to the old pursers of Nelson's time; the officers of the Medical Branch; and Chaplains and Naval Instructors.

When steam propulsion was introduced into the Navy special men with mechanical knowledge were required to take charge of the machinery. This led to the Engineering Branch being started. In the beginning the majority of those who entered were most worthy individuals, but they lacked the education and polish of the average naval officer, and were not fully conversant with the many conventions of polite society. The Navy is not a snobbish profession, but it is impossible to graft men of poor social education suddenly on to an officers' mess without causing considerable discomfort and friction.

I will quote one incident which occurred somewhere about 1880.

The wife of our Ambassador at Constantinople accepted an invitation to lunch on board a small ship lying off that town. It was, of course, quite an event in that little community, and considerable trouble was taken to make the lunch a success. Soon after the meal started, the waiter offered Her Excellency marsala, which she refused. The kindly but unpolished Engineer Officer of the old school, who in virtue of his rank was sitting next to her, said confidentially: "That's right, Mum. Don't take none of that there marselly wine, it do come back that there sour." There was, of course, nothing wrong with the old boy's statement, any more than with that made to a certain high personage by the wife of a northern magnate who, when her very exalted guest refused an ice, remarked: "It's a poor

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belly that cannot warm an ice!" But such crudities of expression are not generally current in what is called polite society, and are apt to create embarrassment. The above tale will perhaps show that, without being in the slightest bit snobbish, the social instincts of the majority of the officers of the Navy were out of harmony with those of the older and rougher diamonds of the engineering line. It is therefore easy to see that in the old days a well-defined line of separation was bound to exist between the executive and engineering branches which it took many years to break down completely.

At the root of the trouble lay social distinctions. The institution of relative ranks between the officers of the two branches was only a sop and, of course, applied only at naval and not social functions. The following puts the matter in a nutshell. Sir John Fisher related how a Chief Engineer Officer by the name of Brown worried his friend, the First Lieutenant of the ship in which both were serving, to exasperation by continually reminding him that he ranked before him on shore, when going in to dinner, and on other occasions. "Look here, Brown," said the First Lieutenant, "it doesn't matter what rank the Admiralty give you and I don't care a damn whether you walk in to dinner before me or after me; but all I know, Brown, is that my Ma will never ask your Ma to tea!"

With great wisdom the Admiralty set to work to alter these conditions. The training ship *Marlborough* was selected, and young engineer officers were entered and trained on board of her from the very start of their careers. The junior engineer officers' mess in sea-going ships was abolished, the younger officers were sent to mess in the gun-room and the more senior ones continued to mess in the ward-room. The result was that a very fine and efficient body of engineer officers was built up, who, besides being excellent engineers, were most congenial messmates.

Before long some of the engineer officers commenced an agitation for increased status; and claims for executive rank were put forward, on the ground that the ship was useless without her engines, and therefore those who worked the engines should command the ship. The claim always appeared to me to be parallel with that of the idiot

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organ-blower who, at the end of a magnificent performance by a first-class organist, remarked: "We played that very nicely!"

The player, a man without a sense of humour, was annoyed and corrected him haughtily, saying: "You mean I played it well."

Next Sunday, when the *Te Deum* should have started, the organ refused to emit even a groan. "Blow up, you darned idiot, blow up," said the organist as loudly as he dared. The idiot grinned, and said: "Are you playing it, or are we?" Of course, the player had to capitulate, and own that half the skill of playing was due to the boy. But was it so?

It was not for an instant denied that, had engineer officers been trained in deck work and in navigation, in the same way that executive officers had been trained, they would have been equally competent to command ships; but the view, stoutly held by many, was that, having no such training, they were obviously incompetent to perform these duties. The agitation, however, grew and became yearly harder to controvert. There was little doubt that serious trouble was in store in the Navy unless the matter was adjusted. The reasonable solution was to amalgamate as far as was possible the engineering and executive lines.

The agitation was carried to the House of Commons, and whenever that august body has taken sides in internal naval controversies they have ever taken the wrong course, created trouble, and clouded the clear issues.

What Sir John and his advisers (I was not one) had in view to meet the situation was to educate all the cadets entering the *Britannia* in engineering and executive duties, and at the approximate age of twenty-five to divide lieutenants into two branches. After this the engineers remained in the engineering branch and the executive officers in the executive branch. But each and all, should occasion arise, could assist in the duties of the other branch.

The executive branch had the naval commands open to them. The engineering branch had the commands of the dockyards, the Head of the Engineering Department at the Admiralty and the Controllership of the Navy to look forward to. It seemed that there were considerable advantages in leaving specializing until the age of twenty-five, since the

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aptitude of an officer for excelling in either branch could then be better gauged. These were the principles that underlay the naval education scheme. Needless to say, it met with great opposition from the majority of naval officers. Let us see why.

Naval officers of those days might well be divided into several distinct types. Dispersed as they were world wide, it was not infrequently the case that, when trouble arose, the only British official present was a naval officer. He had to act as representative of the King and Empire. Diplomatic action not infrequently fell to his lot, as well as energetic action in the case of emergency. Suavity on occasions was necessary, and an iron hand at others. Administrative capacity was at times required. The virtues of an ideal naval commander indeed formed a kaleidoscopic combination in the days before wireless communication with England existed.

I need only give one such instance, namely, that of Rear-Admiral Gerard Noel, who was sent to Crete in 1898, after a massacre of British subjects had taken place. On arrival at Candia he sent for the Turkish Governor, who pleaded inability to attend, but was told that unless he did so the Konak, his official residence, would be bombarded. He then came. The Admiral interviewed him and gave him an ultimatum that unless the murderers were on the quay by 6 p.m. his palace would be blown to smithereens. He left the Admiral's cabin wiping his forehead with his fez, an almost unique act in the history of the Turks. At 5.30 no prisoners had arrived, so the *Revenge* went to action stations and trained her guns on the palace. At five minutes to six the first batch of murderers was marched on to the quay. The story of the international court-martial, conviction, and hanging of the murderers need not be told here. Suffice it to say that Lord Salisbury, then Foreign Minister, is reported to have said that the best ambassador he knew was Sir Gerard Noel (he had been given the K.C.M.G. for his services at Candia) and his flagship, the *Revenge*.

Of course, in every profession individuals vary in type, but in one like the Navy, where the strong moulding influence of sea life and command reacts on the development of character and temperament, and where men of consider-

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able variety of character are confined in close company within the limits of a ship, the lights and shades of character become very apparent. Perhaps in many ways the finest type was the one we may call the 'sahib type.' Aristocratic and conservative to the highest degree, they stood for what was best in the Navy and for the Navy. To them it was anathema that an executive officer should dabble in engineering. His hands were for use socially, for sport, or in games, and not for tools and mechanical work.

If a brake could have been applied to evolution, if progress could have been slowed up, it would have been well if this type could have been perpetuated in the Navy. Some of the finest brains, certainly the finest characters, belonged to this class; and at a time when telegraphic communication with England was scant, and wireless non-existent, these officers were of the greatest value to the country. But the advance of progress which heralded a wave of enthusiasm for democratic principles could not be stopped. So this ultra-conservative element had to suffer modification and gradual extinction. An example of this class was the senior officer on the West Coast of Africa, who always took off his coat before reading the Bible; since, when in uniform, he could not recognize any superior power.

Next, and to a certain extent merged into the sahib class, came those who worshipped the cult of ultra-politeness, a characteristic which by no means infected all sahibs, who often exhibited a caustic frigidity which was particularly wounding. There was a story prevalent in the Navy of an officer who, having cut himself shaving, was found deeply apologizing to his reflection in the mirror for the injury he had inflicted. This was held to be symbolic of the ultra-polite class.

Then there were men of an exactly opposite temperament who prided themselves on calling a spade a spade, but who more usually called it a 'bloody shovel.' They were to be admired for their honesty; but, it must be confessed, they were hard and prickly messmates. But talking of shovels reminds me of a quaint definition given by a sailor to his chum. The chum, seeking after knowledge, asked what an anthem was. So his friend thought for a bit and then said:

"Well, Bill, if I say 'Bill, give me that spade'—that's

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talking. If I say 'Oh, Bill, you give me that blooming spade'—that's singing. But if I say 'Oh, Bill, give me; me, oh, Bill, give; oh, Bill, you give me that ruddy spade'—that's a hanthem!"

A typical member of this bluff, hale, and hearty class was that Post Captain who was seen talking confidentially to a young woman at a dance; and who, when the band suddenly stopped playing, was heard to bellow out:

"I'm only a simple sailor, but will you marry me?"

Or another realist who, after a very energetic waltz, noticing that a girl was showing too much bosom, went up to her and stammered: "Excuse me, b-but your baby's chow-chow is hanging out." Doubly unfortunate it was that she was unmarried![1]

What was perhaps the best example of want of tact was perpetrated not by a naval officer but by Lord John Russell, one of England's Prime Ministers in the mid-Victorian era. One day when seated by the Duchess of Sutherland he rose suddenly and, walking to the other end of the room, sat down by the Duchess of Inverness. So brusque was his departure that a friend asked him afterwards if he had quarrelled with the lady. He replied: "Oh no, but the fire was so hot that if I had stayed any longer I should have been ill." "I suppose you told the Duchess the reason of your departure," queried the friend. "I don't know that I did," was the reply, "but I told the Duchess of Inverness!"

Perhaps the hardest to beat is one for which we are indebted to Mr. W. W. Jacobs. A bluff, honest old dock foreman, wishing to be particularly nice to his cantankerous wife, unfortunately said: "No, my dear, I didn't marry you for your looks, but for something what 'as wore better."

Another and different class of tact was shown by Lord Fisher on an august occasion. This is his description of the incident. "My beloved friend, Soveral (the Portuguese Ambassador), one of King Edward's treasured friends, asked me to lunch on Queen Alexandra's sixtieth birthday. After lunch all the people said something nice to Queen Alexandra, and it came to my turn. I said to Her Majesty:

[1] I am in terribly hot water for including this old time, though perfectly true, incident!

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'Have you seen that halfpenny newspaper about Your Majesty's birthday?' She said she hadn't, what was it? I said these were the words:

'The Queen is sixty to-day!
May she live till she looks it!'

"Her Majesty said: 'Get me a copy of it.' (Such a thing didn't exist!) About three weeks afterwards she said: 'Where's that halfpenny newspaper?' I was staggered for a moment, but recovered myself and said: 'Sold out, Ma'am, couldn't get a copy!' (I think my second lie was better than my first)."

But to return to the Navy. There was a class called 'X-chasers,' that is, those who had done well in examinations and were supposed to be budding scientists and mathematicians. These were always the butt of those who had only mediocre brains. It is true that, now and then, one of the X-chasing class would be more of a theorist than a practical man. As, for example, the Commander who in the midnight hours devised an algebraic formula for coaling ship. The coaling was a fiasco, for, it was rumoured, he had somehow got the men who worked in the fore hold with the shovels on the opposite side of the equation to those who performed the same work in the after hold, and had cancelled out both parties! But then, the unrighteous always have the gift of gibing at their betters!

The old song described the 'X-chaser' by saying that when he returned from a course at Greenwich College he was:

'Thought to be the maddest of all mad characters
When he tried to split the starboard watch and idlers into factors.'

Or again, when officer of the watch with the ship under sail, was said to have shouted:

"When she was taken flat aback,
Let go your square root starboard alpha beta stunsail tack!"

But, gibes apart, the development of our weapons of war was largely due to men who, though perhaps not remarkably practical, yet were brilliantly equipped mentally. Nor was it by any means true that the cleverest of our theorists were not excellent practical sailors.

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Then there was the plain, average, hard-working, zealous and proficient officer, without superabundant gifts, and also without marked eccentricities; who, in reality, was the backbone of the Navy in each succeeding generation.

Eccentrics, of course, we all knew. Such as he who tore up all the letters he received without reading them, because he never wrote to anyone, and therefore no one had any right to write to him.

I remember one Colonel of Marines who hated to hear the two Corps of Marines called Red and Blue Marines. He insisted on their being called by the colloquially unwieldy titles of the Royal Marine Artillery and the Royal Marine Light Infantry. Of course, we ruffians evaded the difficulty by talking of the men who wore red merino or blue merino socks, which left him spluttering and speechless, but at the same time helpless to object officially.

But enough of these reminiscences.

It is easy to see that the majority of the above classes of executive naval officers, for one reason or another, disliked the new education scheme. The sahibs believed that, inevitably, their high standards of what the executive officer should be, and of the duties he should perform, would be lowered. The bluff seaman, appreciating the poorness of his theoretical equipment, felt that he, more than ever, would fall into the background; and others, with the strong conservatism which is bound to be the feature of a fighting force, hated change of all sort; hating change merely because it was change.

A few, of course, saw that democracy and democratic views could not in the end be denied, and that it was better to yield then, and smooth the way gradually, than eventually to suffer a die-hard defeat.

Such, broadly speaking, were the types of naval officers, their views and prejudices, in the year 1902, when the change of entry of naval officers was made and Sir John Fisher introduced his revised scheme for naval education. The success or failure of the new departure depended on how the scheme was administered by successive Boards of the Admiralty. As years passed modifications were introduced; whether for better or worse, time alone can show.

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Chapter V

THE DESIGN OF H.M.S. 'DREADNOUGHT'

JACKIE FISHER WAS A VERY REMARKABLE MAN. HE WAS remarkable in appearance, in conversation, in versatility, in foresight, and in indomitable energy and fixity of purpose. Probably he was at the zenith of his faculties in 1905–1906.

Although I shall deal more fully with the attributes of this great man later on, it will not be out of place here to point out a few of the salient features of his character before dealing with the reforms introduced by him into the Navy.

Anyone entering a room crowded with people would be certain to pick out Fisher and ask who he was. Anyone who had talked with him could not fail to be impressed by his qualities. In fact, Mr. Garvin, the talented editor of the *Observer*, was able to write:

> 'I have known personally a dozen men who have been in my time among the most remarkable and famous men in the world. Lord Fisher was the most fascinating of them all and the least like any other man.'

There you have it, and there in the tail-end lies the difficulty. 'The least like any other man.' Hence the impossibility of painting an adequate word-portrait. I will, however, quote a couple of paragraphs from what I have previously written:

He had a marvellous memory, keen, quick perception, a ready and agile mind, a sound judgment, an insatiable love of work, and a strong religious feeling. Naturally the associations of the Navy with the history of his country created in him a fervent patriotism; while the ever-changing interests of sea life in the old sailing days, with its thousand-and-one technical interests, engendered a love of his profession. These two passions, that of patriotism, and that of

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love of the Navy, mingled indissolubly and formed the dominating influence of his life. To him they seemed to be synonymous, and caused him to become the champion of every kind of naval reform; for, by furthering anything by which the Navy might benefit, he ensured the greatest safety of his country; and his slogan became: 'The efficiency of the Navy and its instant readiness for war.'

Few men, I imagine, have been more lied about than Fisher. His projected reforms acted as an irritant to some who had had the opportunity to introduce them and had failed to do so. It shook up, and touched on the raw, those who saw the more 'cushy' appointments in the Navy to which they had looked forward disappear before the wave of economy and efficiency. He inevitably trod on toes; toes do not matter, but to tread on the coils of a snake may lead to the ejection of poison.

The commonest untruth which was spread abroad was that 'Fisher was out for himself only'; this was utterly devoid of fact. He was said to be vindictive; this again was untrue; but he had no patience with inefficiency. He was content with a Dean Page Roberts assurance that 'there was no Bankruptcy Act in Heaven; no ten shillings in the pound there, every moral debt had to be paid in full,' and he left it for the Day of Judgment to deal with his detractors.

Very true is the following simile of himself which he wrote to Dean Armitage Robinson:

> 'Moses prepared his people forty years for the war in the Holy Land, but he didn't go over Jordan, though his eyes were not dim, nor his natural force abated. Perhaps I have spoken inadvisedly with my lips, like Moses, and have been punished accordingly.'

In truth it was the words spoken inadvisedly which led him to the toilsome and uphill journey to his Pisgah.

When first I knew Fisher he had an extraordinary foresight in divining almost uncannily who the objectors to his schemes would be and the form their objections would take. He would go to infinite trouble to allay their fears and make them converts to his proposals. His usual method was to engage them in conversation and disarm them by saying: "My dear chap, I know exactly what you will say," and then

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ADMIRAL OF THE FLEET LORD FISHER,
O.M., G.C.B., G.C.V.O.

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he would detail exactly what he knew the man's objections to be, and having done so, he would controvert their doubts in his own witty and persuasive way. By so doing he never allowed the man to commit himself and so his conversion was made easy.

But as he aged he became more autocratic. I shall, however, have more to say about Sir John Fisher later on, but the above few remarks are necessary in order to introduce the author of the naval reforms and the originator of the *Dreadnought* class of battleship.

Before proceeding to outline the major reforms that he instituted I will quote the introduction he wrote to the memorandum in which he laid his proposals for the reforms before the Board of Admiralty:

> 'Every page herein, if it can be accepted, means a definite increase in fighting efficiency and an undoubted decrease in cost.
>
> 'The reduction in this year's Navy Estimates of £3,500,000 is accompanied by at least a quadrupling of the instant striking force of our Navy; and suddenness is the secret of success.
>
> 'It must be understood that the reforms indicated in this volume are the results of several minds all working to a common end, and therefore the form in which the proposals are cast may be capable of alteration and improvement.
>
> 'The human intellect works in widely different grooves, and the power of grasping a truth and giving effect to it is not always associated with the power of language and a clear exposition and argument. Moreover, some of the proposals require that careful consideration in detail which can only be given when action has been decided upon the broad principles laid down.
>
> 'While, therefore, the proposals must be considered as one complete whole, it is not contended that any particular method of action requires to be followed exactly in the manner suggested. In the working out of any scheme much must be left to future departmental action.'

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These are not the words of an inflexible autocrat, but rather those of a man convinced that in principle his proposals are right, but willing to have all the suggestions improved and amended by the advice of his fellows.

With the first reform, Naval Education, I have already dealt.

The next in order of merit was the design of the *Dreadnought.*

The *Dreadnought* was the outcome of the labour of many brains; and, in its broad details, was designed under Sir John's ægis before he went to the Admiralty as First Sea Lord.

The *Dreadnought* was designed to have a speed of twenty-one knots. This was vigorously attacked by the malcontents. But never yet have I heard any solution to the problem of how you can fight an enemy if you have insufficient speed to catch him. This was well exemplified at Jutland, where the Grand Fleet as a whole was inferior in speed to the four *König* battleships, and had no margin of speed over the *Kaiser* class. The late hour when the engagement started did not allow sufficient time to overhaul the slower of the enemy's ships. Of course, if contact had been made earlier in the day, the extra speed of the Grand Fleet over the slowest of the German dreadnoughts and pre-dreadnoughts would either have forced a general action with the whole of the High Sea Fleet, or the slower ships would have been left to the mercy of the Grand Fleet.

With his usual sagacity Sir John Fisher foresaw opposition to the new design, and gauged its intensity. He therefore placed the sketch designs for the *Dreadnought* and the battle cruisers before a committee composed of well-known engineers, constructors, scientists, and naval officers He knew that the names of Lord Kelvin, Sir Charles Parsons, Professor Biles, and Alexander Gracie, apart from the Admiralty Director of Naval Construction and the Engineer-in-Chief, would be certain to carry great weight with the British public; and that the names of those naval officers who were selected to serve on the committee would carry equal weight inside the naval service.

He put the matter tersely in a letter. 'Selborne has agreed to my being President of a committee to devise new

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types of fighting ships. I explained to him that I had got the designs out of what had to be; but it was a politic thing to have a committee of good names, and then Tommy Bowles and others will fire away at them and leave me alone.'

Several alternative designs were laid before the committee for them to discuss, embodying twin turrets, triple turrets, etc.: but the main design, which it was intended that they should adopt, was that which may be called the pre-designed *Dreadnought*. This was, in the end, adopted with one modification.

The committee finally agreed on the turbine as the type of main engine. Hitherto no turbines of anything approaching the size of those proposed for the *Dreadnought* had been installed in any ships, either in the Royal Navy or the Merchant Service. But, with courage born of confidence in the views of the engineering element of the committee, the turbine was accepted.

The *Amethyst*, a small cruiser, was at that time being fitted with turbines, but necessarily much smaller than those proposed for the *Dreadnought*. During her acceptance trials she cracked one of the large castings. This was a shock, and I must confess that I had doubts as to whether too many innovations were not being simultaneously tried in a single ship. So much hung on the success of the *Dreadnought*, and had the engines failed it is quite possible that the whole design might have been condemned. Sir John showed great courage: on the assurance of the Engineer-in-Chief he stuck to his turbines; and, by his decision, in one swoop increased the fighting efficiency of the future ships of the Navy by at least 80 per cent.

Well may some ask why did the change of type of engine so greatly increase the fighting efficiency of our fleet? This can be explained without indulging in technicalities.

The steam-engines of our battleships prior to the *Dreadnought* were what were called *reciprocating* engines. The engines had cylinders, and inside these cylinders were heavy pistons, which the steam pushed once up and once down during each revolution of the propeller shaft. Hence the term reciprocating. On board our large men-of-war not only had the horse-power of the engines to be great; but, for proper protection in action, the whole of each engine

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had to be installed below the armoured deck. Hence the height of the engine was severely restricted. The longer the distance moved by the piston of an engine the less are the number of revolutions required to obtain a given horse-power; in other words, an engine of 6-feet stroke—*cæteris paribus*—will require double the number of revolutions to obtain the same horse-power as an engine of similar details having a 12-feet stroke. The long, and comparatively slow, stroke of the engines of the large liners, which rose high in the ship above the water-line, could not be installed in our fighting ships. The result was that our engines had to revolve at about 120 revolutions a minute; so that the whole of the huge momentum of the heavy pistons, and other moving parts, had to be generated and destroyed four times in every second. The result was that the brass bearings were subjected to great pressure and consequently undue stress and wear. It was not uncommon to find that, after a few hours' steaming at full speed, a number of bearings required readjustment, and that if the engines were not stopped and the proper readjustments made, a break-down would in all probability occur. After a battleship had run a four-hour full speed steam trial she often required ten days in which to readjust her main bearings.

One memorable trial was carried out by the Second Cruiser Squadron under the command of Prince Louis of Battenberg from Sandy Hook to Gibraltar in November 1905. The result of this run was that the ships struggled into port, and, for more than a month afterwards, the whole squadron was out of action while the engines were being readjusted. The ships concerned in this test were H.M.S. *Drake* (flagship), *Bedford*, *Berwick*, *Cornwall*, *Cumberland*, and *Essex*, all of which were propelled by reciprocating engines of the triple expansion type.

Turbine engines, on the other hand, consisted essentially of heavy discs keyed to a central shaft; these spun continuously in the same direction without variation in speed. They were noiseless. In fact, I have frequently visited the engine-room of the *Dreadnought* when at sea, steaming seventeen knots, and have been unable to tell whether the engines were revolving or not. During a full-speed run the difference between the engine-room of the *Dreadnought*

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and that of the *Irresistible*, an old class ship, was extraordinary. In the *Dreadnought* there was no noise, no steam was visible, no water or oil splashing about, the officers and men were clean; in fact, the ship to all appearances might have been in harbour and the turbines stopped. In the *Irresistible* the noise was deafening. It was impossible to make a remark plainly audible, and telephones were useless. The deck plates were greasy with oil and water, so that it was difficult to walk about without slipping. Some gland was certain to be blowing a little, which made the atmosphere murky with steam. One or more hoses would be playing on a bearing which threatened trouble. Men, constantly working round the engine, would be feeling the bearings to see if they were running cool, or showed signs of heating; and the officers would be seen with their coats buttoned up to their throats and perhaps in oilskins, black in the face, and with their clothes wet with oil and water.

In the old ships everyone was relieved when the quarterly speed trials concluded without mishap. A trial, it may be remarked, which was not a real full-speed trial, but one carried out at a certain high but fixed horse-power. In the *Dreadnought* such a trial created no anxiety or comment.

I could tell many stories of the quarterly speed trials of the old days. How ships, in spite of regulations to the contrary, *would* race; and although the regulation horse-power was never exceeded on the indicator diagrams, yet the speeds obtained were considerably greater than those that the horse-power recorded could possibly have given. How a righteous Flagship beaten on the trial, on returning to harbour, tried to prove that the other ships had broken the regulations and exceeded their proper power; but how, on inspection, all was found to be in order and so the worsted inquisitor was bowed out of the ship to the scarcely concealed delight of the officers and men.

In one ship we had a very stout chief stoker, an excellent man in every way, but he was undeniably fat; before one of these trials the Chief Engineer sent for this man and was heard to threaten him: "Look here, Jones," he said, "if you let that old 'Nonesuch' beat you in the trial, I'll work you, and I'll work you, till you're so thin that you'll be able to wipe your nose on the loose skin of your stomach!"

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This, it must be acknowledged, was indeed a terrible threat.

The second great improvement in the *Dreadnought* design was a revolution in the ship's armament. Ships hitherto had been designed to fight at a short range. The *Dreadnought* was designed to fight at ranges of about ten thousand yards. This necessitated all the main armament being of one type of gun; and, if a ship has to have one type only, common sense insisted that this type should be the heaviest that she can carry; and, at least, as heavy as the largest gun mounted in any ship in a foreign navy.

The design immediately preceding the *Dreadnought* was that of the *Lord Nelson* and *Agamemnon*. These had each three types of gun: 12-inch, 9·2-inch, and 6-inch, all of which were considered as portions of the main armament. This class of design was excusable for short-range action, but hopelessly impossible for long-range fighting.

While in the Mediterranean Sir John Fisher had been collecting ideas for building a new class of warship. When at Portsmouth he continued to study the question and started to sketch the rough designs of a battleship, a first-class cruiser, and an ocean-going destroyer. Amongst his assistants were Mr. W. H. Gard, the Chief Constructor of the Dockyard, and Mr. Alexander Gracie,[1] of the Fairfield Shipbuilding Company, as technical consultants, and, of course, several naval officers, of whom I was one.

The problem of design became a simple matter when once it had been decided that the gun armament should be arranged solely on modern gunnery requirements. The argument we advanced was: 'What on earth was the use of arming a ship with 12-inch guns and 9·2-inch guns and 6-inch guns for long-range hitting? Either the 12-inch had a uselessly long range or the 6-inch an absurdly short one. Surely it was best to put all the available gun weight into guns that could fight at the longest range, and wing the enemy before he could close.' This was mere common sense. Further still, the modern developments of long-range hitting were clearly proving that a minimum of eight guns, all of the same calibre, was required to ensure good hitting; and that when rapidity of fire was taken into

[1] Afterwards Sir Alexander Gracie, K.B.E.

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account, at least twelve such guns were required to obtain the best results.

The difficulty of hitting a ship at long ranges is due to the impossibility of seeing exactly in what position, as regards that ship, the projectile that was last fired fell. It is obviously useless to fire away round after round if all the shots are falling to the right or left, or short, or over the ship we desire to hit.

We can all appreciate that it is easy to see if the splash made by the projectile on hitting the water is in line with the ship fired at; and should it happen to be in line, whether the splash was between us and the ship, or beyond the ship. We can also appreciate that at seven miles distance it would be impossible to say whether a splash that was between us and a ship was a thousand yards or fifty yards short of her; or, if the splash was the other side of the ship, whether it was fifty or a thousand yards beyond her.

Now when a broadside, say, of five shells is fired (all guns being aimed at the same object), all the shells fortunately do not drop into the same hole in the water; there is a certain 'spread,' some being beyond others, some to the left or right of the others. It is this 'spread' that enables ranging to be carried out. If all the splashes are seen to be short of the ship, the next time the broadside or 'salvo,' as it is called, is fired, the range is put up, say, five hundred yards. If still all are short another five hundred yards is added to the range. If the next salvo puts them all 'over', then the range is dropped until some of the splashes are seen to be over and some to be short. Then the spotting officer is contented, for he has got the enemy's ship right in the middle of his salvo, and some of the shells will hit her.

In order to get good shooting, many other calculations are necessary so as to allow for the change of position of the enemy between salvos, and during the time the projectile is going through the air, but into these we need not enter.

It is easy to appreciate that 'salvos' of not less than five shells were desirable; also, as the range in an action is always altering to some extent, it is highly desirable to have only short intervals between the salvos.

Hence it was desirable to instal in the ship double the number of guns required for a single salvo, so that

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one half could be loading while the other half were being fired. It was proved to be beyond the wit of man to get a mixed salvo of 12-inch, 9·2-inch, and 6-inch guns reasonably concentrated. In order to hit at long ranges, therefore, a single main armament of one single type of gun was necessary. It was not difficult to carry the day with regard to installing one single type of the heaviest guns in the battleships; but in the case of the battle-cruiser this was more difficult; and, for some time, the armament of that class hung in the balance.

My arguments were quite simple and absolutely incontrovertible. First the cruiser should have greater speed than any merchant liner. This was necessary because we knew that the German liners were carrying guns to be used for commerce destruction, and it was imperative that we should have cruisers capable of overtaking them; whereas, at that time, none of our armoured cruisers had sufficient speed to do so.

This truth has lately once more been brought into prominence, when it was discovered that the *Repulse* could not be spared to take the King and Queen to Canada, as she was one of the only two ships then available of a sufficient armament that we had which could out-steam the German pocket battleships. A third ship to which this qualification applied, H.M.S. *Renown*, was at that time under reconstruction.

As a makeshift policy, the Admiralty had, prior to 1900, subsidized two of our fastest liners at a high price; and, by this charter, they were responsible for full payment to the owners in the event of damage or loss in action. These liners had never been built to fight; they were unarmoured and had their engines exposed above the water line.

It was, we argued, far more economical to build fighting cruisers strong enough to overhaul the German ships; and, at the same time, to arm them so as to be able to work as fleet cruisers. By so doing, we could get real value for the money spent. Furthermore, while the speed of the Battle Fleet was increasing yearly, it was necessary for our large cruisers to have, and in future to maintain, an excess of at least four knots in speed over that of the battleships. This fixed the speed of the cruisers at twenty-five knots.

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The battle over the armament was a severe one; but the day was carried by the argument that the gun should be of the same calibre as that of the battleship, so that the cruisers could be used in a fleet action as a fast auxiliary squadron, instead of having to remain inactive owing to the fact that their guns could not range their enemy until they themselves had been compelled to close near enough to be under a murderous fire. The speed and armament having been fixed, a medium armour protection only could be afforded to the battle cruisers without exceeding a reasonable tonnage.

Of course the Adullamites, who disliked Sir John and all his works, seized on the details of the *Dreadnought* as soon as the design was known and opposed it tooth and nail. The country was astounded and perplexed to find that several naval officers of high rank on the retired list vehemently condemned the new departure. It is a remarkable thing how often civilians fail to appreciate that the Admiralty are bound to be in possession of more accurate information, and to know better the requirements of the Navy, than do retired naval officers, even if they are able to write Admiral after their names in their letters to the Press. In the case of the *Dreadnought*, readers of the morning papers rarely appreciated the fact that the Admiralty were in possession of the latest gunnery information; and that, month by month, sea-going trials were proving the necessity of adopting the very principles that these retired officers, in their ignorance, were condemning. Nor did they, nor do they always now, appreciate that the only officers who are permitted to write to the papers are those who are unemployed; and whose knowledge must be, for that very reason, to a great extent, out of date.

A literary genius at this time remarked of a certain well-known officer: "He is seeking (and who with better right?) to dispel the ennui of an unpalatable leisure by a dalliance with the editors of newspapers and magazines. This must not surprise us. There are instances and to spare to prove that Fate reserves the *cacoethes scribendi* more particularly as the Scylla for retired Admirals, just as the garrulity of the after-dinner speech is their Charybdis. A rich and genuine experience teaches us what to be prepared for when retired

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officers take up the pen quickly. Such matters are between writer and publisher; we may even admire the courage of one, and the simplicity of the other."

Of course the politicians eagerly welcomed any agitation that would cheapen naval construction, and herein lay the danger of this outside attack. There is no doubt that we should have run a great risk of losing the Great War had the short-sighted advice given by some of the antagonistic Admirals been adopted. But, worst of all, was the inside attack on the part of Sir George Sydenham Clarke,[1] who was at that time Secretary of the Imperial Defence Committee; and who, behind the back of the Admiralty, tried to influence the mind of the Prime Minister against the *Dreadnought*, and pleaded with him to appoint a committee to consider the Admiralty proposals. Further, he corresponded with Admirals on the active list with a view to furthering his ends. This secret campaign was providentially disclosed owing to one of his communications to the Prime Minister being forwarded by accident to the Admiralty. The sequel is best told in Sir George's own words:

"Sir Henry Campbell-Bannerman gave serious consideration to my representations intended only for his private information, but he, inadvertently, sent some of them to the Admiralty over my name. When he realized what this might mean he expressed his regret in the kindest terms; but I gathered that there was danger ahead and that my position had become insecure."

Things, indeed, had come to a pretty pass when the Secretary of the Committee of Imperial Defence was privately conspiring against Admiralty policy, by consulting malcontent Admirals and communicating their views to the Prime Minister.

It gives me a cold shiver down the back to think how fatal would have been the result had Sir John flinched before this determined attack. So impressed was I at the time, and have been ever since, by the danger of naval officers, without full knowledge, attacking an Admiralty decision on types of construction, that I have given strict orders that if ever I were to do such a thing, it was to be

[1] Afterwards Lord Sydenham of Coombe, G.C.M.G., G.C.I.E., G.B.E., F.R.S.

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H.M.S. ' DREADNOUGHT '

with names of officers and representatives of the firms engaged in her construction and fitting-out.

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taken as a sign of dotage, and that my pens and paper should be taken from me and locked up.

This does not apply, of course, to vacillations in policy on the part of the Admiralty to suit the political views of the moment, such as we have not infrequently seen in the last twenty years. No condemnation is too severe for these from naval officers and laymen alike.

The determined attack on the *Dreadnought*, however, served one useful purpose; namely, it distracted attention from the large cruisers, so that it was not until the first of these was in commission that the German Admiralty woke up to the fact that they were two years behind us in cruiser design, a lead they were never able subsequently to pick up. When the Great War came our battle-cruisers were all round finer vessels than those of the enemy.

I have dealt, at perhaps wearisome length, with the origin and conception of the *Dreadnought* design of battleships and cruisers. But it is as well to dispel the accusation so sedulously spread, and which even now is repeated in some quarters, that the *Dreadnought* was a design made merely to satisfy a lust on the part of Lord Fisher for increase in size of ships and naval armaments generally. I hope I have shown that, in fact, it was a design impelled by the experience that was being accumulated of long-range fighting and generally necessary to fulfil the requirements of modern naval tactics and strategy.

Some people with peculiarly constituted minds have gone so far as to insist that, even knowing as we did that the *Dreadnought* was the best type to build, we should, knowingly, have built the second best type of ship. What would have been the verdict of the country if Germany had, from her own practical experience, built to a *Dreadnought* design while we were building *Lord Nelsons*, and then had forced a war on us and beaten our fleet? What would have been the verdict of the country if a subsequent inquiry elicited the fact that those responsible at the Admiralty for the safety of the nation had deliberately recommended the building of second-class ships? Surely they would either have demanded the heads of those responsible on chargers, or seen that they were duly hanged higher than Haman on the lamp-posts of Trafalgar Square.

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Chapter VI

REFORMS

THE THIRD MAJOR REFORM WHICH CREATED MUCH COMMENT at that time was the scrapping of obsolete men-of-war. There is a certain magpie strain in human nature that causes individuals to collect, and keep, remnants of all sorts on the plea 'that they will come in useful some day'!

This reminds me of a story I have told before but which will stand repeating.

After one of the early manœuvres, about 1887, a torpedo-boat entered harbour after having been a couple of days in a gale of wind. Water had found its way below; and, amon g other casualties, the boat's medicine-chest had been soaked through. This, with other articles, was brought up on deck to be thoroughly dried. On opening the box it was found that the pill-boxes were mere pulp, and their contents in a moist condition. Not knowing how salt water might agree with their various ingredients, the Captain of the boat told the gunner to throw them overboard; but that Warrant Officer, being imbued with the acquisitive instincts of his class, poured the contents of the various boxes into his horny palm, saying: "I'll keep 'em, sir, they'll come in useful at 'ome!" and promptly transferred the red, green, blue, and brown pills *en masse* into his trouser pocket. What the result was on the health of his family, history does not relate!

In these days rummage sales owe their popularity to a like instinct of acquisitiveness. Not only do they afford an opportunity for the buyers to load themselves with doubtful rubbish, but the same instinct in mere man, who loves his old clothes, causes him sedulously to keep his wardrobe under lock and key when these annual impositions are felt to be in the offing.

Talking of rummage sales reminds me of a tale told me

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by my old friend Charles Ellis. He had an old and much beloved pair of slippers, which, having escaped many assaults at rummage sale time, at last found their way into the octopod maws of that annual event. When he discovered his loss he, with his retriever Carlo, stole down in the dead of night to the rummage rubbish-heap and extracted the spoil. They then, without awakening the members of the household, crawled quietly upstairs each carrying a slipper. What can be said for an institution which causes honest householders to behave like burglars! That it wrought havoc with Carlo's morals is certain, for, subsequently, on a November day, he buried a pheasant in the snow, and during the lunch-time was discovered eating the bird which had been retrieved by him from his cache. When, however, we come to deal with ships instead of remnants and clothes, the matter assumes a more important aspect.

It should be an axiom at the Admiralty that every ship on the active list must be kept in an efficient condition. Crews have to be ready to man them in case of mobilization; stores, ammunition, and their necessary reserves have to be kept on board, or in store-houses and magazines ashore. Painting and minor repairs also have to be periodically carried out. All these entail expenditure of money.

When, in 1905, Sir John Fisher undertook a thorough stocktaking of the Navy, the question was inevitably raised as to how many of the older vessels that were absorbing men, and consuming money, would be of real service in the case of war. It must be remembered that, before the Great War, the country had not been educated to think in hundreds of millions. We then thought in hundreds of thousands. The Navy Estimates stood at what was then considered to be the high-water mark of departmental expenditure, some £40,000,000 sterling. At that time income tax was 1s. 3d. or 1s. 6d. in the pound. It was therefore apparent that, if the Navy was to be reorganized, if new types of battleships and cruisers were to be built; if, in other words, our Navy was to be brought abreast of modern scientific discovery and in step with our latest practical experience, then rigid economy was absolutely necessary. The really useful ships had to be segregated from those that *might* come in useful, and the wages of the crews, cost of

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repairs and upkeep and other expenditure devoted to them and them only.

The Russo-Japanese War, and the commencement of the journey of the ill-fated Rodjestvenski armada, brought us, in October 1904, face to face with the possibilities of war. A conflagration was nearly started by the North Sea incident, when the nerves of the untrained crews of the ships of the Russian Fleet became so jittery, that our trawlers were mistaken for Japanese destroyers; promiscuous firing began, and several of our fishing boats were sunk. This incident gave us seriously to think of the tragic swiftness with which war might supplant peace. In such momentous times, those who are at the head of affairs find there is a vast difference between flirting with war plans in peace time and writing executive telegrams ready for dispatch on the eve of war.

One item in our war preparations that then appeared serious and afterwards ludicrous was the problem of how to deal with the number of small British gunboats that were dotted about the world doing nothing that was in any way useful except what was called 'showing' the British flag. It was apparent that in case hostilities commenced, it was necessary to pay off such of these as happened to be stationed near to any possible theatre of war, since they could neither fight nor run away. The end of the old *Bulldog*, a small vessel that, years before, had to be blown up by her own crew to prevent her from being taken by the enemy, indicated the fate that would be in store for these gunboats if they remained in commission in war-time. Here, indeed, was a class of vessel of doubtful value.[1]

During the preceding months, while deciding on the armament of the battle-cruisers, we had also been considering what was the real value of our small cruisers as fleet cruisers; and we had come to the conclusion that they were too weak to press home a reconnaissance; since, in a seaway, they were too slow to evade the attack and pursuit of the larger enemy cruisers. Cruisers large enough to press

[1] The fate of H.M.S. *Pegasus* at Zanzibar in September 1914 (she could neither run away nor fight effectively when attacked by the *Königsberg*) provides a moral. She had been condemned as useless for war purposes by Sir John Fisher, but was afterwards brought back into the Service.

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back the enemy's cruisers and get into actual visual contact with the enemy's fleet were an absolute necessity; but vessels which would have to scurry away as soon as they sighted a large cruiser were quite useless for serious fleet scouting.

Further, when the list of the ships in the Navy came to be closely scrutinized, it was seen that there were a number, not only of cruisers, but also of battleships that were quite out of date. Among these were the *Admiral* class, the *Colossus*, the *Edinburgh*, and the old *Alexandra*, which had been launched in 1873 and reconditioned towards the end of the last century. These were found to be magnificent on paper, splendid when weight of broadside was taken as a criterion of efficiency; but, in reality, the majority were absolutely useless for fighting purposes.

There were, of course, a good many that were found to belong to what we called the '*Llama* class,' a term we coined to symbolize border-line ships which were still useful but which would shortly become obsolete.

The result was that lists were prepared with great care showing which ships it was proposed to retain for auxiliary purposes, such as minelayers, blocking ships, etc., in war time; and yet another list detailing those recommended for scrapping or sale. Then by a 'courageous stroke of the pen,' as Mr. Balfour called it, the reform received sanction and these lists were approved.

At once the trouble began!

Of course the Opposition in the House of Commons saw a chance of embarrassing the Government: Fisher's enemies screamed: the 'Bath Chair Flotilla' of retired Admirals was wheeled into the conflict, and a howling storm raged for months. Scribes with no financial responsibility nor inside knowledge, but whose pens were sharp and whose tongues were loud, prophesied ruin to the Navy. The purging was, however, carried through in spite of all opposition. The foundations of the Navy were relaid, upon which a new fleet arose; temporarily, it is true, decreased in numbers and of reduced strength on paper (a deadly sin in the eye of the pseudo-expert); but, in fact, the Navy was stronger for this winter pruning, and the dockyards, home ports, docks, and storehouses were relieved of

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encumbrances, and better able to devote their facilities to ships which were of real fighting value.

Another reform of first-class importance was the formation of the 'nucleus' crew system. Hitherto the ships laid up in reserve had been looked after and cared for by a body of men called the 'steam reserve.' Each ship had her engineer and warrant officers properly appointed; but the crews who would man the ships on the outbreak of war were dispersed, some carrying out peace duties on board harbour ships, others going through courses at the schools. The result was that, on mobilization, nearly every man in the ship's company of each ship was ignorant of everything to do with that vessel. It was no uncommon thing during the first few days after commissioning for the men to wander about below deck walking aft when they thought they were moving forward, and unable to find the particular compartment for which they were seeking.

The captains of the guns and turrets knew neither the idiosyncrasies of their guns nor the peculiarities of the mechanism of their turrets. The men were strangers to the officers, and the officers strangers to the men. It was obviously impossible for ships to be efficient when suddenly mobilized under these conditions.

There was another fault in the old system. Although a scheme had been produced for the complete mobilization of the Fleet, there was no provision for the partial mobilization of a few ships only without disturbing the work of the gunnery and torpedo schools. In fact, when in 1896 we commissioned the Special Service Squadron of two battleships, two first-class cruisers, and two second-class cruisers, a considerable muddle ensued. The ship to which I was appointed, the *Theseus*, had wrong nominal lists sent with the men. The result was that it was not until we had been in commission for a fortnight that we were able to say for certain that we had the correct names of all the men on board the ship.

Allied to this question of manning was the scandal, for it was little else, of the time that some ships were kept in commission on foreign stations. Commissions of five years' duration were not uncommon. The usual time was three to three and a half years; but, as the time for relief

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came on, an international crisis, or some other cause, might delay the dispatch of a relief crew. In some cases also the relief crews, instead of leaving at their proper date, were kept waiting until a large ship happened to be going out to a distant station, so as to avoid the expense of paying the fares in merchant liners. So four years and a half would pass before a relief crew would start from England; then they had to journey perhaps to China, or some equally distant station, and the old crew after relief had to wait for some cheap or convenient passage home.

I knew one lieutenant who married and who only saw his wife for three months in eight years. He married a fortnight before his ship sailed for China and served for four years on that station. He then came home for a bare three months, and was sent off for another four years to the south-east coast of America. This class of cruelty must not infrequently have fallen on the men. Service under such conditions was little less than slavery.

Sir John, above all, was very human, although his detractors never would credit him with this virtue; and it was entirely due to him that two-year commissions were introduced. It was he who, in this matter, stoutly championed the rights of the individual against the bureaucrats who hated change, especially when change meant spending money.

Short commissions of definite durations were made possible only by scrapping the useless ships and introducing the nucleus crew system. By these reforms the personnel of the Navy was more skilfully allocated, more humanly employed and more efficiently trained, so that far greater all-round efficiency was obtained without the addition of a single active service rating to the roster of the Navy. Briefly, the nucleus crew system gave to each ship which was on the mobilization list a skeleton crew both of officers and men, who constantly lived in her and who kept her in order. One third of these men were changed each year; so that, on mobilization, the men who formed the backbone of the ship's company were actually living on board, ready to shake the remainder of the complement into their places when they arrived. All these ships were moored in harbours well away from the jetties of the dockyard, which was a most

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necessary, though seemingly small, step towards obtaining efficiency.

I remember visiting, with the Second Sea Lord, the nucleus crew ships lying between Sheerness and Chatham. Nothing was in view from the ships but mud flats. An old petty officer, in reply to a question as to whether he found it dull being so far from the shore, answered: "No, bless you, sir, what the eye can't see the 'eart don't long for." Truly an old sea dog of a philosophical turn of mind!

Needless to say these innovations were not arranged without opposition. I remember when trouble arose at one port, Sir John sent a telegram to cheer up his subordinate, the draft of which, in his own handwriting, was for a year or two kept pinned below his photograph in the room where his secretaries worked. It read thus:

'They may kick, but I can kick harder.' There was a lot of comfort, truth, and sense in those few words.

The nucleus crew ships were divided into three divisions, each of which was based on one of the three home ports, Sheerness, Plymouth, and Portsmouth. Periodically they assembled for a short cruise under the Admiral appointed to command the Reserve Fleet. It was this dispersion of the divisions that enabled Sir John to carry out his master stroke of peace strategy, that of concentrating our modern Home Fleet in the North Sea.

At this time the Government were trying to negotiate a naval holiday with Germany. Needless to say that country had not the slightest intention of reducing her building programme; but it was the hope of our politicians that she might be persuaded to do so, and they were prepared to make considerable concessions in order to obtain her consent to the proposal. Therefore it was quite obvious to Sir John that any attempt openly to concentrate one of our fully commissioned battle fleets in the North Sea (that is for such an active fleet to use the North Sea as its main cruising ground) would meet with strong remonstrance from Germany; and, in order to placate that country, any such scheme would be at once countermanded. He therefore obtained his objective in the following manner.

When the *Dreadnought* returned from Trinidad after her experimental cruise she was made the flagship of the

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nucleus crew fleet; but she, herself, retained her full complement. The ostensible reason for consigning her to the company of the older ships was that she was too large to manœuvre with the battleships of the other fleets. She was, moreover, sent to that portion of the reserve which was stationed at Sheerness. As succeeding dreadnought battleships came along they naturally joined the *Dreadnought*; so, almost imperceptibly, all our latest ships were formed into a fleet with Sheerness as its base. It was not until it was too late to protest that the German Admiralty realized that we had a fleet of enormous power, in fact the whole of our dreadnoughts, permanently based *vis-à-vis* to her North Sea ports. It was useless for her Government to object to what was no longer an innovation.

A short while back I mentioned the attack on our trawlers by the Russian Fleet in the Russo-Japanese War. This war has always had, for me, a fascinating interest; not so much from what actually happened, as from what might have happened had the *Petropavlovsk* not been sunk by a mine. It may be remembered that at the commencement of the war the Russians had a fine fleet in Port Arthur, the ships of which, moreover, were quite strong enough to face the Japanese Fleet, and make a good fight; but their crews were badly trained and lacked morale. For several months these ships were inactive; but when Admiral Makarov arrived and took command, a change at once came over the crews of the vessels. From the reports that filtered through it seemed that Admiral Makarov was similar in character to our Admiral of the Fleet Sir Arthur Wilson. At all events, his energy and example stirred up enthusiasm, and brought efficiency where slackness had previously reigned. The ships were taken out in the open sea for cruises, and a fighting spirit was created and fostered in the officers and men. Then a fatal mine sunk the flagship, Makarov was drowned, and the officers and men of the Fleet, having lost the strong hand that guided them and the enthusiasm of the Admiral who had inspired them, sank back once more into the slough of inefficiency.

I am convinced that Makarov intended, after his fleet had become really efficient, to take it out when some suitable opportunity occurred to fight the Japanese Battle Fleet at

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reasonably close quarters; for his ships had sufficient speed to force a conclusive action. It mattered not if every one of his ships had been sunk, provided he inflicted serious damage on the Japanese Fleet as a fighting force. Why? Because behind laid Rodjestvenski's fleet on its way to the East. If the Japanese Fleet had been engaged and seriously damaged just before the advent of Rodjestvenski's fleet, that fleet, on arrival, should have cut the line of communication between the Japanese Army in Manchuria, and Japan and the War would have assumed a totally different complexion. If the Japanese Fleet had been really severely handled after Rodjestvenski's fleet had sailed, in all probability Korea would have been evacuated by the Japanese Army. I cannot call to mind any occasion on which so golden an opportunity was afforded to an Admiral endowed with strategic insight as that presented to Makarov. Without doubt he would have taken advantage of his opportunity to the full had his life been spared. Whether Rodjestvenski would have been man enough to exploit the advantage is, of course, a matter of doubt. But, had Makarov survived a titanic action with the Japanese Fleet, and subsequently assumed command of the best of Rodjestvenski's ships, it is difficult to see how Japan could have avoided either concluding a hasty peace or sustaining an overwhelming defeat.

I now come to the reform in which I took immense interest; in fact I think I may claim to have originated the idea; and that was to provide watch-keeping warrant officers from the stoker class.

There was a fiction prevalent at that time that the mere fact of a man being an engine-room artificer was sufficient to warrant his being able to take charge of a watch in the engine-room, totally regardless of whether his trade was that of fitter, boilermaker, or coppersmith; and, further, that engine-room artificers, only, were capable of watch-keeping duties. But it seemed to me absurd to contend that, out of thirty thousand stoker ratings, young men, if properly instructed, could not be found fit to rise to responsible positions and to take charge of machinery. If the stoker ratings were given a chance of rising to warrant officer rank it was bound to react on the class of men entering as stokers; and, therefore, improvement in general ability could be

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looked for. I have always had an intense admiration for our old stoker ratings. It is true that some of the younger entries were wild, untamed youngsters, who had no idea of the meaning of the word discipline. This was largely due to the fact that they had been allowed to run wild before enrolling as stokers; but these usually tamed down when they found that they either had to do so, or else again would have to find a living ashore. The fact that, when ashore, dinner was not 'piped' with the regularity that it was on board ship, appealed to many who had had a lean time before entering the Navy; so all except the absolutely untameable settled down into useful members of society.

The following episode is typical of the old-time leading stoker. A torpedo-boat was running her trials off the Isle of Wight, and as the run was finishing the forced draught was shut down, but the baffle plates of one boiler failed to act, and the flames from the furnace blew back into the stokehold. One young stoker made a bee-line for the ladder; but the old chief stoker caught him by the seat of his pants and dragged him down into the inferno where the flames were playing round his legs, and said:

"If ever yer leaves this stokehold *without my permission* I'll knock your bloomin' 'ead off."

I am glad to say that this so impressed the builders that they bought the chief stoker out of the Navy, and put him in charge of the stoking of their boats when on contractors' trials.

But to return to the Admiralty.

The Navy was short of stokers for the new ships, or rather a shortage was forecasted. While Sir John was preoccupied with raising the number to the proper level he received a latter from a man saying that he was six feet two inches in height, fifty-four inches round the chest, had shovelled coal from his boyhood up, and was anxious to join the Navy as a stoker, but had been plucked because he could not pass in long division!

Those who knew Sir John can easily picture the upheaval that followed. The whole of the naval recruiting officers were summoned to the Admiralty to receive a homily on the relative advantages, so far as shovelling coal was concerned, of physique and elementary mathematics. Hercules was

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duly entered without more ado, and the officers were enjoined to use greater discretion and less blind adherence to the letter of the law.

In the delivery of this class of impromptu lecture Sir John excelled. He could say the most outrageous things without giving offence. In addressing the representatives of the shipbuilding and engineering world early in the War, he had to deal with a fairly solemn audience, and certainly a grave occasion, since a united and almost superhuman exertion was required to force forward the ships ordered for the Navy. Yet he ended his harangue by impressing his hearers that, if they failed to keep their dates, he would 'make their wives widows, and their houses dunghills'! He was, of course, wise to use Biblical quotations; for how could the most rigid Churchman or Nonconformist object to such a threat when they, times without number, had associated themselves with a like wish that the same dire end might befall their enemies?

I well remember my dear old Mother, who would not wish evil even to a fly, putting the utmost venom into these villainous and vindictive desires when reading the Psalms at family prayers.

Having mentioned my Mother I must halt to say a few words in tribute to one whose whole life was a texture woven of kindness and generosity, one who was beloved by all who knew her. Having a keen sense of humour she was in no way a pessimist, yet from the recesses of my memory comes one of her sayings which was accompanied by a roguish smile: "I always prefer a funeral to a wedding, for then you do know the worst!" There is a dickens of a lot of subtle humour in this dictum.

In conversation Fisher was most original and disarming. After the Egyptian War, when recovering from dysentery, he was lunching with Queen Victoria and happened to tell the lady next to him that he had enough flannel round his middle to go round the room. She laughed, and the Queen asked what was the joke. It was not given to many to talk about their tummies to that August Lady; but Fisher repeated his statement in so frank and disarming a manner that the Queen was greatly amused and laughed also.

A more outrageous occasion was when King Edward VII

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was staying with Fisher at Admiralty House at Portsmouth. The King suddenly called to Fisher across the table: "Admiral, Lady —— says that you sailors have a wife in every port." Without an instant's pause, Fisher rapped out: "Wouldn't you have liked to have been a sailor, sir?" For just a moment a severe look came over the King's face, and then he burst out into a genuine hearty laugh.

Another reform with which I was associated at that time was the thorough overhaul of the dockyard and store-keeping administration. As a result of the inquiry the constructive and engineering branches of the dockyards were placed on a more satisfactory basis, and the authority of their heads was enlarged and defined. It also came to light that there were several branches, Medical, Store, Victualling, and Dockyard, all holding stocks of the same article which led to considerably greater total numbers being held than was necessary. This was not in itself perhaps a matter of great importance; but it led to Fisher enunciating the principle that it was more economical for the contractors, and not the Admiralty, to carry the stocks. Large stocks necessitated large store-houses, store-keepers, wear and tear and depreciation, besides capital lying idle. It was, therefore, obviously economical for the Admiralty to order often but little more than what was actually required, and so to keep down the stocks to a minimum.

At this period an opportunity was afforded for the Navy to take over the defence of our naval ports. We had succeeded in achieving the abolition of the minefields which were laid by the Royal Engineers off our harbours. These and the Brennan torpedo were quite out of date. The guns of the forts were a sufficient deterrent to any fleet that might wish to force an entrance to our harbours. But Sir John Fisher would not agree to the Marines taking over the shore defences of the naval ports. The turnover would have necessitated a transfer of a million sterling from the Army to the Navy vote, and Sir John was straining every nerve to keep down the Navy Estimates. In vain it was pointed out to him that the transfer did not involve any increased charge to the nation. No! the total *naval* estimate would be increased, and he knew that the world at large is always doubtful of the validity of an excuse, however true that excuse may be.

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I was greatly disappointed, as we had a scheme fully worked out. The forts would have been manned by the Royal Marine Artillery, so that on foreign stations the Marines in the forts and those on the ships could have been interchangeable, and taken for cruises, which certainly would have benefited the health of those stationed ashore. But the fundamental advantage was that the defence of the harbour would be under the man who knew the disposition of our own and the enemy's ships, and that the forts would be manned by men who knew an English from a foreign man-of-war. No! Sir John would not have it.

At Dover during the War I had full experience of the stupidity of the present system. It was only because of extreme broadmindedness on the part of the military authorities that serious accidents did not take place. I and my Chief of Staff were the only persons who knew the general distribution of our destroyers, and their movements, when a raid by German boats was in progress. It was impossible to communicate these changes in position to the military authorities in time to be of service to the men behind the guns. For the safety of our vessels I was compelled to ask that the military should not open fire on any vessels without first consulting me. It was too much to expect that they would agree to this. At a conference held in London between the Admiralty and the War Office it was decided that the military should open fire on any vessel should they wish to do so, but they were to stop when I requested them. Knowing well that no German destroyers could ever seriously damage Dover, I gave orders that, automatically, immediately a gun was fired, the military were to be asked to cease firing.

Such was the Gilbertian position, and the same exists to-day! And yet we pride ourselves on being a practical race! In Italy the shore defence of the naval ports is under the Admiral, and so it should be in England. If the present system is adhered to, then in these days when fishing craft are largely used in war, naval officers, retired if necessary, should be stationed in the forts so as to have someone at hand who can recognize enemy from friend, and these officers should be kept in constant touch with the disposition of our ships. I commend the matter to the Minister for the Co-ordination of Defence. For, if ever there was a

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problem requiring co-ordinating, that of the command of the entry and exit of ships and auxiliary craft to and from our harbours is the one.

With my mind on the subject of mistakes a curious case of error arising from similarity of words came under my notice. A certain Post Captain was expecting to be offered the command of the *Cambridge*, the Gunnery School ship at Devonport. While on the Mediterranean Station he received a telegram addressed to him in the usual Admiralty manner containing the two words, 'Anxious Cambridge.' He looked up in the Admiralty telegraphic code-book the code word for 'First Lord offers you following appointment,' which was 'ancious.' Not unnaturally he thought that the 'c' and 'x' had been transposed in transmission. So he wired accepting the appointment, and also wrote to the Commander-in-Chief of the Station informing him of his acceptance. To his great disappointment the Admiralty expressed themselves entirely ignorant of such a telegram. It was not until after a week or so that he found out that the wire had come from his brother, who was anxious to know what were the chances of his obtaining the appointment. He was never appointed to the *Cambridge*. Whether his premature acceptance had anything to do with his failure, I do not know, but ever after he was of opinion that it had militated against his selection.

Another muddle, more complicated still, happened to a relative of mine a century ago. His name was Loudon, and he was fairly well known in London circles. He was perhaps rather eccentric, with a leaning towards scientific pursuits. Further, his handwriting was rather worse than usual, even among the learned. Among other subjects in which he dabbled was that of forestry and arboriculture. Having heard that there were some very fine beech trees on a property owned by, and named after, the Great Duke, he wrote to him asking for permission to go down and see his Wellington beeches. The Duke read the letter, mistook 'Loudon' for 'London,' and in his habitual picturesque language consigned the Bishop of London to eternal perdition, wanting to know why by all that was unholy he wished to see his Wellington *breeches*; and then replied, saying that he could see his breeches whenever he cared to

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go to Stratfield Saye. When the Bishop received the letter his language was more episcopal but none the less to the point. He confided to his chaplain his opinion that the Duke had gone off his head; for, if there was one thing above all other that had no interest at all for him, it was the Duke's wardrobe. This he politely conveyed in a letter to the Duke. Then a more careful study of the original letter and the address from which it hailed showed that old Loudon's handwriting had been the cause of all this pother.

As Assistant to the First Sea Lord I had not an exciting life, but a lot of work. All papers, of which there were many dozen daily, came either to me or his most able Civil Secretary, W. F. Nicholson. He dealt with the non-technical subjects; I took the remainder. All these papers had to be devilled and a précis made of the more important subjects. Sir John hated routine work, his mind was full of his larger schemes, and it was with difficulty that we cornered him in the evenings and forced him to put his signature to the documents on which otherwise action could not be taken. Rarely would he look at them until after seven o'clock. This caused us to work late hours.

The work during that year was very hard and varied. At one time, in addition to my routine work, I was sitting on eight committees and sub-committees, and also doing much explanatory writing in connection with the schemes. Further, Nicholson and I had to act as buffers between those who visited the Admiral to see him on matters of small importance.

I remember, in particular, one inventor who brought with him a suggestion for destroying the whole German Navy by laying a huge mine-field in the North Sea and exploding all the mines simultaneously. He hoped, thereby, to raise a huge wave and capsize all German ships that were floating in that vast area. As well can be imagined, a man whose ideas bordered on the impossible was not an easy person to boom off. Years after, when I was Controller of the Inventions Department in the Ministry of Munitions, this man returned to the charge, this time professing to be able to create any wind, from any direction, at any required time. But this tale belongs to another period, and will be narrated later on.

There were, of course, many callers of great interest.

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Commendatore Eduardo de Martino, who was a great personal friend of Sir John Fisher, spent a quarter of an hour or so in my office. To keep him employed I asked him to make me a sketch of an old line of battleship. Most good-naturedly he set to work at once. He was left-handed, his right hand being crippled by rheumatism and rendered powerless to hold a pencil or brush, so he had taught himself to use his left hand. The first thing he did was to tear off a piece of the blotting-paper and squiggle it to make a brush. The squiggly part was the handle and the flat end the brush proper. Then armed with this and a 'J' pen, in five minutes he had made the sketch shown on the previous page.

Sir John was very apt with his remarks on paper. Take, for example, his reply to the Parliamentary question as to whether the new naval education scheme was a success and, if so, why it had not been instituted before. It was certainly original and to the point, although not given in the House of Commons. On reading the question he seized a pencil and hurriedly wrote: 'The answer to the first part is in the affirmative, as regards the second part, it might have been asked the Deity as regards the Creation.' No other words could have stated the case more plainly.

This reminds me of the reply made by Mr. Hughes, when Australian Prime Minister, to President Wilson during the framing of the Treaty of Versailles. There had been a difference of opinion about the mandates over some of the islands in the Pacific. Australia wanted the mandate and so did America. At last, rather heatedly, the President said:

"Mr. Hughes, am I to understand that you, who represent a country of one million and a half inhabitants, wish to press your views in opposition to one who represents one hundred and fifty million people?"

Mr. Hughes, who was rather deaf, and had been pushing his sound machine over towards the President so as not to miss a single word, replied:

"Mr. President, you could not have stated the case more clearly!"

When the end of 1905 approached I was determined to go to sea. Sir John Fisher had promised to keep me only one year, and I kept him to his word, for I had been quite long enough in what the old Navy used to call a 'stone frigate.'

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Chapter VII

H.M.S. 'IRRESISTIBLE'

TOWARDS THE END OF 1905 I WAS ANXIOUS TO GO TO SEA in command of a battleship. I had had a strenuous time at the Admiralty; moreover, there was just a chance of my being given the command of the *Dreadnought* when she commissioned for her trials and first period of service. If this matured it was as well for me to have had experience as captain of a battleship before taking up that command.

Sir John had offered me the command of the *Dreadnought*; which needless to say I had jumped at, but the First Lord, without his knowledge, had promised it to Captain the Hon. Hugh Tyrwhitt, his Naval Secretary, a charming man, and in every way fitted to hold the command. Sir John, however, considered that the special experience I had gained in the particular appointments that I had held during my career in the Navy would be of value in probing the good and bad points of the ship on her experimental cruise; he therefore favoured me rather than Tyrwhitt for the appointment; but the First Lord's promise was bound to hold good. There were, however, some months to run before any selection was definitely needed, during which time other appointments suitable for a senior officer might become vacant which Tyrwhitt might prefer, and for which his qualifications might well be greater than mine.

For several reasons I wished to join the Mediterranean Fleet. First, I had heard many reports of Lord Charles Beresford and his charm as Commander-in-Chief. Secondly, it should be the aim of every captain, who sees before him the chance of commanding our large fleets, to serve under the most prominent of our Admirals so as to study their good qualities, and, if possible, profit by appreciating their weak points. Of course personality cannot be created, since it is a gift that defies imitation; but, at the same time, a

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good deal can be done towards obtaining fitness for command by noting any particular attributes shown by those holding high positions afloat; and, as far as possible, using the experience so gained to the amelioration of temperament and character.

At this time Sir John and Lord Charles were on reasonably friendly terms. Let me sketch the position as known to me at the time.

When Sir John was Commander-in-Chief on the Mediterranean Station in 1900 Lord Charles was appointed to the post of Rear-Admiral in that battle fleet; an excellent appointment. Unfortunately, shortly before he took up his command notices appeared in the Press saying that Lord Charles Beresford was going out to the Mediterranean to teach the Battle Fleet how to manœuvre; and as statements made by Lord Charles were at that time good Press copy, this remark received considerable publicity. Such a statement was bound to convey to the man in the street two things: first, that the Mediterranean Fleet was in need of training; and, secondly, that either Sir John Fisher was incompetent to carry out the training, or that Lord Charles had better qualifications than Sir John Fisher. Sir John was not the class of man to take that sort of thing lying down. However, for the moment he sat tight, and said nothing; but he was a dangerous man to fall foul of in this manner, as he had infinitely more brain-power and foresight than the gallant and charming Lord Charles.

Lord Charles took up his appointment, and all went well until he landed seamen on the Corredino parade ground at Malta and invited some of the senior officers to witness him handling this human squadron in the same manner as he proposed to handle battleships. Then Sir John put his foot down. The first step was to call on Lord Charles's Flag Captain to explain why men were landed on the parade ground without permission of the Chief of Staff, and therefore in contravention of the Station Orders. Lord Charles, of course, shouldered the responsibility. Then followed an interview which took the form of a heart-to-heart talk. In this Lord Charles was given to understand that Sir John Fisher commanded the Mediterranean Fleet and was responsible for its efficiency and training; and that it was not until Lord

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Charles had thoroughly grasped this fact, and was content to regulate his exuberant energy in accordance with the fundamental principles of Naval discipline, that he would be given charge of a Squadron to play with away from the flag of the Commander-in-Chief. The result was a complete clearing of the atmosphere, and the two Admirals became good friends.

The next ruffle came when Lord Charles was associated with a journalistic venture which questioned Admiralty policy. This created a stir for the moment. He came away with a temporary loss of a few tail feathers. Sir John kept aloof, and though in no way responsible, suffered inferentially, as Lord Charles had been under his command.

When, however, Sir John started his new scheme for the education of officers, Lord Charles ranged himself against the proposals. His Irish temperament made him love an argument; and, moreover, his Sahib instincts, although he was in some ways a thorough democrat, made him dislike the proposals for common entry for the Engineer, Marine, and Executive branches. Although thus opposed to Sir John's reforms the two were, at that time, friendly enough. The bitterness which Lord Charles afterwards showed did not develop until he discovered that Sir John intended to stay on as First Sea Lord after he had been promoted to Admiral of the Fleet, and until such a time as he was forced to retire for age. This meant that Lord Charles could never become First Sea Lord. On appreciating this fact, Lord Charles used every means to get Sir John's period of service at the Admiralty cut short. I shall have, I regret to say, to refer to this at greater length hereafter, but at the time to which I now refer, that is the autumn of 1905, the relations between the two Admirals were friendly; though, on account of Lord Charles's opposition to Sir John's reforms, they were gradually becoming less cordial.

There was, at that time, no battleship in the Mediterranean due to pay off in the near future; and, while I was wondering which of the several fleets I should try to join, my old friend Captain Sackville Carden unexpectedly came to see me. He told me that he had been called home on urgent private affairs, and that, although he would have to go out to the Mediterranean again for a month or so, he had

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determined to throw up the command of the *Irresistible* in December. Here was my chance. So next day I bearded Sir John with the request to go to sea, and, moreover, to go to the *Irresistible* in the Mediterranean Fleet. I must confess that it was with some slight amusement, mingled with a certain amount of trepidation, that I broached the subject.

Sir John was not best pleased. Firstly, he did not wish to change his Naval Assistant; secondly, he did not much relish my going to the Mediterranean and falling under the fascination of Lord Charles Beresford's seductive personality. As usual, when taken aback, he said nothing for a few seconds. He then tried to persuade me to wait for a ship in the Atlantic or Home Fleet; but I stuck firmly to my request, for Carden had also told me that the *Irresistible* was due to leave for a cruise by herself to the coast of Greece before Christmas, and for the whole of January. I knew that coast well, also the places where the woodcock would be if they happened to be in, and I was determined if possible to have my one month of woodcock shooting; the first real holiday I had had for four years. Those wretched woodcock, and my obstinacy, were to be the indirect cause of much trouble for me hereafter.

With reasonably good grace Sir John consented; but when I said good-bye to him he never wished me luck, and I could see that he still resented my apparent defection.

I always look on Lord Charles Beresford as the most charming Commander-in-Chief under whom I have ever served. All his subordinates loved him, for he was an ideal leader of men, and had he been given a really good staff he would have been a great Admiral in war-time; but he was essentially an Admiral who was dependent on his staff. His mercurial temperament militated against deep study or concentrated thought; but a natural quickness and alertness of intellect enabled him to seize on important points. He threw his whole energy into the present, which often made matters of a purely momentary interest, and of small value, appear to him to be of undue importance; this did not fail to produce a want of balance in his judgment.

At one period of his career, when a Post Captain, his attention was wholly taken up with mines, and he advocated that large numbers of these should be carried by every ship.

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At another time large cruisers appeared to him of the utmost importance; shortly after this, the necessity for destroyers seemed to him to eclipse the provision of all other craft. The particular subject that claimed his attention for the moment obsessed him to the exclusion of other matters, which, in reality, were of greater importance.

Unfortunately, his Chief of Staff, Captain Doveton Sturdee,[1] an excellent officer, had contracted a great dislike for Fisher and all his works; and, since Lord Charles was greatly influenced by his staff, the smouldering embers of his dislike of the reforms were thus blown into a more active flame. It was a very great pity that he did not have at his right hand a man of broader views, and more favourably inclined to reforms. Had this been the case a very great deal of the trouble which eventually ensued would undoubtedly have been nipped in the bud.

When I arrived under his command he viewed me with some suspicion, coming, as I did, straight from my post as Assistant to Sir John Fisher. But we were soon on friendly terms. Only on one occasion, and on one occasion only, when his staff tried to steal my best engine-room artificer, did we have a small passage of arms. I discussed freely with him all the Admiralty reforms, and argued in favour of them from the Admiralty point of view. I always look back to my term of service under his flag with pleasure, my only regret being that it was so short.

Rear-Admiral the Hon. Sir Hedworth Lambton[2] was at that time in command of the cruisers in the Mediterranean. He was certainly one of the most able officers I have ever known who held high command in the Navy. Unfortunately, he was a man of many preoccupations, and the Navy never absorbed the whole of his energies. He was, however, an Admiral of broad vision, and one whose views were always listened to with respect. He disliked the majority of Sir John's reforms and wrote his objections openly and clearly to the Admiralty.

Shortly after joining the Fleet he sent me a copy of his letter, and asked me for my remarks on what he had written. I replied, giving full answers to his arguments; we then

[1] Afterwards Admiral Sir Doveton Sturdee, Bart.
[2] Afterwards Admiral of the Fleet the Hon. Sir Hedworth Meux.

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discussed the whole subject from A to Z; and, in the end, we agreed to differ.

In this manner, early in 1905 both the Admirals on the Station had discussed the reforms with me. They knew my views, which were largely the same as those of Sir John Fisher, and I knew theirs, which were those they had expressed to the Admiralty. Although, while at the Admiralty, I had, as Sir John's Naval Assistant, discussed with him the views expressed by all senior officers whether on the active or retired lists, yet, on joining the Mediterranean, I came under the command of Lord Charles Beresford. It would therefore have been highly improper for me to have written home to Sir John any remarks on the professional ability of my Commander-in-Chief, or indeed that of any of the officers of the Fleet; or even to have mentioned the name of anyone who viewed the Admiralty reforms with disapproval. But, on the other hand, it was an advantage to the Navy for me to point out to Sir John any weak points in the Admiralty proposals which were being discovered by the brains of those at sea. I was therefore very careful as to what I wrote to him. So far as I can remember, during the six months that I was on that Station, I wrote six or seven letters; not one of these contained a word of criticism of any senior or junior officer on the Station; nor, with one exception, to which I will refer later, did I mention any of their names.

I did not hesitate to say how the new reforms were received by the active service generally. Many officers were against them, many were neutral, and some, especially the younger ones, were entirely in favour of them; but I mentioned no names. I wrote two letters which I never posted. In the first one, which I wrote soon after my arrival on the Station, I gave the gist of a friendly discussion I had had with Lord Charles on certain reforms. His arguments appeared to be quite sound from his point of view, but they did not coincide with the opinions held at the Admiralty. I wrote the letter with every intention of showing it to Lord Charles in case he had any objection to my sending it on; but I was so new to the command that I thought it injudicious to do this, so I therefore never posted it. The other letter which I burned was the last one I wrote at sea after the

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joint manœuvres of the Atlantic and Home Fleets. On reading it through I came to the conclusion that, by inference, it criticized a fleet action which Lord Charles had fought, so I destroyed it also.

Another letter which I wrote filled twenty pages of foolscap; but this dealt solely with what friends at the Admiralty had told me that Sir John proposed doing with regard to the status of engineer officers. I pulled these proposals to pieces in a very rough way; and, as he and I were wont to do in a verbal discussion, used hyperbole and exaggerated similes to illustrate our points. These flowery distortions were quite allowable in private argument; but I should have been much distressed to see them in print, since they might have wounded many susceptibilities. Fortunately, as the letter was antagonistic to Sir John's ideas, it was not turned over to the printers. I wrote another, which I headed: 'You can make any use you like of this letter,' which gave my own views, after some four months at sea, as to how the new proposals would, or would not, benefit the Navy. These, with the exception of one other, are all that my memory retains.

In almost every one of the above letters I mentioned how popular Lord Charles was, what an excellent Commander-in-Chief he made, and how much all his captains liked him. For, not only did I greatly admire Lord Charles as a Commander-in-Chief, but I also enjoyed giving the sly dig that I knew Sir John would feel on reading these phrases from the pen of his late Naval Assistant. Needless to say, none of the laudatory remarks ever reached the printing press.

One letter in particular, which was printed and circulated by Sir John without my consent or knowledge, gave rise to a miniature storm known even to this day as 'The Bacon Letters.'

The letter began in this way:

'Lord Charles and Admiral Lambton have been getting at the King.' Friends of Lord Charles seized on this letter, privately asserting and publicly hinting that it was evident that I had been sent out to the Mediterranean by Sir John to spy and report on Lord Charles. Of course this was a lie of the first magnitude; but it served the purpose of the

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inventors to bring discredit on Sir John Fisher. As that untruth is even yet not quite defunct, I will narrate the peculiar circumstances that led to the writing of that letter.

In April 1906 the Mediterranean Fleet proceeded to Corfu to meet the Royal Yacht, which had on board King Edward VII and King George of Greece. The *Renown* was also due to call there homeward bound from India with the Prince of Wales (afterwards King George V) on board. When she arrived I went on board to pay my respects to the Prince. As we had been shipmates in the *Northumberland*, I expected a gracious reception; but, by Jove! I didn't get it! The Prince had always had the interests and welfare of the Navy entirely at heart. He had served at sea, worked up to the rank of Post Captain, was a most capable officer, and was thoroughly imbued with sea lore and with the spirit and traditions of the Royal Navy. Naturally, therefore, the Prince was much exercised on finding, when on the East Indies Station, where somewhat garbled and incomplete accounts of the reforms had filtered through, that the senior officers in Eastern waters, as well as many other officers, condemned them roundly, and that they believed that the reforms would stir up considerable mischief in the Navy.

The Prince spoke to me quite plainly and forcibly. I went back to my ship much disturbed in mind; but, above all things, anxious to put before him, at his leisure, the Admiralty view of the reforms. Through the offices of Captain Tyrwhitt of the *Renown* an interview was arranged for me on the morning of the day that the Fleet left Corfu. Meanwhile I had dined on board the Royal Yacht. After dinner King Edward sent for me and repeated some of the complaints which he had heard, and which I had often heard before. He expressed great concern at the strong adverse feeling in the Fleet, and said that Lord Charles and Admiral Lambton were both very much against the reforms.

This led me to tell him an anecdote about a very distinguished Admiral who one day remarked to me that every naval officer who went to the Admiralty became dishonest.

"You do not mean to say that!" ejaculated the King.

I replied: "No, sir, I do not"; and I explained that the reason he gave for his verdict was, that before going to

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the Admiralty, officers frequently promised to have certain alterations, which appeared desirable, made in matters connected with the Fleet; but, when they arrived at Whitehall, they invariably failed to fulfil their promises.

"The reason for this," I continued, "was not dishonesty, but was due to the fact that when at the Admiralty they had to take a broad view of the Navy as a whole, and to look forward to the future as well as merely to consider the present. The vista of the Navy from Whitehall is infinitely wider and more complex than that afforded by the narrow horizon seen from a ship or fleet."

Further, I pointed out that all reforms were certain to meet with opposition in a Service so conservative as the Navy; nor was it likely that the Board and Sir John would approve of anything that would prove really harmful to the Service.

The King thoroughly appreciated this point of view, and was comforted; but he impressed upon me the necessity of making Sir John Fisher fully acquainted with the opinion of the sea-going Fleet, and said that I, as his late Assistant, should do this. I told him that Sir John was quite aware of the views of most of the senior officers; and, that although some were against the reforms, others were in favour of them.

My interview with the Prince took place after church on Sunday: I had the privilege of a full hour's conversation; and, in the end, I believe I convinced him that things were not so bad as he had been persuaded they were.

The Fleet had been ordered to sail that afternoon at 4 p.m. I returned to the *Irresistible* from my interview at about two o'clock. I knew that the Prince would arrive in England in about a week's time, and that the King would arrive there shortly afterwards; and, although Sir John knew perfectly well the views of Lord Charles and of Rear-Admiral Lambton, he most certainly ought to be informed of the views expressed by the King and also of the doubts that had been raised in the mind of the Prince. I had only one half-hour in which to write, as the mail had to be on board the flagship an hour before sailing; in fact, I received a couple of nasty signals from the flagship for delaying the mail.

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I began my letter colloquially. 'Lord Charles and Admiral Lambton have been getting at the King.' Considering what my relations with Sir John had been, I cannot see, even to-day, anything improper in having so written. Of course, by 'getting at,' I never intended to suggest anything underhand. The Commander-in-Chief, and the Rear-Admiral commanding the cruisers in the Mediterranean, had a perfect right to express their opinions openly to the King. Had I known that my letter was going to be printed and circulated I should undoubtedly have said: 'Lord Charles and Admiral Lambton in their zeal for the Navy have communicated their doubts to His Majesty,' or some such suave expression; but, considering that I had been in close relation with Sir John as his naval private secretary, and had discussed scores of times the objections of Lord Charles and other naval officers, any such expression in a private letter would not have rung true, and would have been absurd. At that time it never entered my mind that either Lord Charles or Admiral Lambton would have objected to my sending the letter had I shown it to them with, of course, the opening expression modified. In fact, when the hubbub arose, I wrote to Lord Charles saying that nothing I had written was intended in any way to reflect on him, and I received a characteristically charming letter in reply, saying that it was not my letter that he objected to, but the use that had been made of it.

Admiral Lambton and I were on perfectly friendly terms. As I have before explained, we discussed his views and the remarks on the new scheme which he had sent to the Admiralty, and there was nothing secret or hidden about the views of either Lord Charles or Admiral Lambton.

Now Lord Fisher was the most indiscreet man I ever met. He never hesitated to print his views and to issue them for private circulation. They were expressed in the bluntest of phrases and were excellent reading, but were apt to make the reader marvel how on earth the writer managed to escape actions for libel. I had no reason to imagine that he would print my letters for private circulation, excepting always the one in which I had specially given that permission; nor should I have had any objection to their being printed if I had been allowed to correct certain broad

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expressions and modify colloquialisms. Letters of mine, however, were printed without my knowledge and circulated privately.

It was not for two years or so that the campaign on the subject of these letters was started. In the meantime relations between Sir John and Lord Charles had become worse. Lord Charles had discovered that Sir John had no intention of vacating his position at the Admiralty on being promoted to Admiral of the Fleet. By his not doing so Lord Charles was deprived of any chance of becoming First Sea Lord, and the real trouble began. Lord Charles looked on Sir John's renewal of his term of office as a breach of naval etiquette. Why he should have done so goodness only knows! The two preceding First Sea Lords had continued to hold that office after being promoted to Admiral of the Fleet. But after this, in his opinion, Sir John could do no right.

Lord Charles' charming personality had made him many ardent friendships. He therefore had a considerable backing both in and outside the Navy and the reforms urged by Sir John became the subject for a virulent anti-Fisher campaign.

Sir John, in his turn, had made mistakes; his verbal and written indiscretions had forged new weapons for his antagonists and helped to swell the ranks of his opponents. Shortly after this campaign had been started my letter was thrown into the hurly burly and used to weaken Sir John's prestige. Of course I was a mere pawn in the game, but the pawn had a bad time.

The attack began with statements in the Press that certain letters had come to light which contained criticisms of the Commander-in-Chief of the Mediterranean Fleet and other officers, which had been sent from that Station to the First Sea Lord. Suggestions were soon made that the writer had been appointed to a ship in the Mediterranean in order to furnish these reports.

A parliamentary campaign was at the same time opened, and some young members, with more zeal than chivalry, daily asked questions framed so as to prejudice Sir John. The whole trouble, so far as Sir John and I were concerned, lay in the fact that the letter could not be published, as it contained direct mention of the King. It is

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a necessary and wholesome rule that the name of the King should be kept outside all controversies. Moreover, the fact that the letter had been written at the King's suggestion naturally could not be divulged. Had it been possible to publish the letter the whole agitation would have collapsed like a house of cards. But Sir John's detractors knew well these disabilities; and, banking on non-publication, hinted that the letter contained criticism of Lord Charles Beresford. It was a dirty game but it succeeded.

As soon as the extract from my letter appeared in the Press I recognized certain expressions, and so discovered, for the first time, that my letters had been privately circulated. I at once went to the First Lord of the Admiralty and asked that my name should be mentioned in answer to the questions in Parliament, as there was nothing that I had written that I had the slightest desire to disown. Also, as I have previously stated, I wrote to Lord Charles, from whom I received a charming reply. Later, however, as Lord Charles fell more and more into the hands of opportunists, he became more and more bitter, and ended by libelling me in the advance copies of a book he wrote called *The Great Betrayal.* Following counsel's opinion, my solicitors called on him to withdraw the statements. This he did in a somewhat grudging manner. So, on the advice of Sir Frank Crisp, who was acting for me, I let the matter drop, litigation between naval officers being indeed a sorry and unedifying spectacle.

The Great Betrayal was a fierce attack on Sir John Fisher and all his works. It cut no ice. But I must quote one paragraph as it refers to me and my letters. It must be remembered that Lord Charles Beresford knew practically everything which I have recounted above, and had written to me a letter in which he exonerated me from all blame, yet he wrote: 'In this statement the First Lord of the Admiralty deliberately associated himself with the system of which the letter in question was a part. "It is," he said, "a perfectly proper letter." We are then to understand that it is perfectly proper *for a junior to forward confidential reports upon the conduct of his superior officers and of the Sovereign himself* direct to the Admiralty.' The italics are mine. It was only because Lord Charles knew

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that the letter could not be published that he dared to print and disseminate so false a statement.

I always regretted having lost Lord Charles's friendship, but he was, unfortunately, easily persuaded for good or for ill by the influence of the particular friends with whom he happened at the moment to be in touch.

The whole of my letters together with the circumstances attending their writing were considered by the Board of Admiralty. Undoubtedly the Board made necessary allowance for crudity of expression owing to the hurry of writing. The result was that I was fully exonerated from the charge of having written anything that was in any way improper.

I have always looked on this verdict as a considerable tribute to my discretion. It is not every private secretary who would care to have his correspondence with his previous Chief scrutinized by so critical an assembly as the Board of Admiralty sitting in solemn conclave.

I joined the *Irresistible* at Malta ; and, a few days afterwards, left in her for Patras. It was an excellent cruise for the ship's company. The men had had no previous chance of being away from the Fleet, and were in need of a good shake-up ; and they got it. In spite of work we had quite a good time with the woodcock. I will not give away their haunts, for that knowledge is the property of the Royal Navy ; but we had some long and strenuous days. It was not an uncommon thing to land at 7.30 a.m. when the day was just breaking, and walk out eight miles along a mule track to the place where we were going to shoot. This took about two hours and a quarter ; so just before ten o'clock we would commence to shoot. Of course, each one of us carried his own cartridges, lunch, and other etceteras. It was always too wet to sit on the ground, so a quarter of an hour standing up sufficed for lunch. We then shot again till about five, had an eight-mile walk back and arrived on board for a bath and dinner at eight.

The cocks were chiefly to be found in thorn covers. Not the ordinary sort of thorn, but the ' wait-a-bit ' variety. These had evil hooks placed back to back in pairs, with their points curving in opposite directions, so that when once hooked into a garment it was necessary either to cut

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them out, or to tear the material. I defeated them, so far as my clothes were concerned, by having my coat and knickerbockers faced with stout sail canvas; but hands, face, and legs were scratched by them with considerable venom. But what glorious days they were! We were all reasonably young and in a fit condition, so the days did not seem arduous. On one occasion one of the sergeants of Marines asked to come with us, having, as he said with pride, been out with the beaters in England. He started as smart as a new pin, but came back in rags, limping, poor fellow, with blistered feet. Still, he said he had enjoyed himself. However, we got no more volunteers from beaters to come on similar excursions.

Before starting from Malta the Commander, J. D. Dick, told me that two of the midshipmen had bought guns preparatory to shooting during the trip. I had my doubts about the class of gun Malta could provide, so sent for the boys and their weapons. One gun had no maker's name on it, and the other was inscribed 'Jones. B——.'[1] To serve as proof-marks they both had hieroglyphics which were quite indecipherable. I confiscated the nameless weapon; but, although I had little doubt that 'Jones. B——' had been engraved at some continental factory, I passed that gun as it had the decency to sport some maker's name, even if it were a faked one. I turned over an old gun that I had had ever since I had been a midshipman to the gunroom officers, to make up for the one that I had confiscated.

While lying at Corfu the boys went over to Butrinto for a day in the marsh. In the evening the Commander reported that a gun belonging to a midshipman had burst and that a native had been injured. I suspected 'Jones. B——,' and my surmise was correct. I sent for the boy and asked him what had happened. He told me he had lent the gun to a native who had asked to have a shot, and when he let it off it broke in the middle, some part had hit the Turco on

[1] Originally I entered the name of the town that was inscribed on the gun, but it was pointed out that if a gunmaker of the name of 'Jones' resided in that town he could, under the present state of the law of libel, sue me for a defamation of capacity in manufacture. I hope that if there is only one 'Jones' who makes guns in England, Ireland, Scotland, or Wales, I shall not still be incurring unknown penalties.

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the forehead and had cut him, but had done him no serious damage. I asked the boy if the gun had shown any signs of strain during the afternoon. He said: "Well, sir, the Turco had been very keen on my letting him have a shot; so, as the gun seemed to have got a bit loose about the middle, I thought it was better that he should have the next shot instead of me." Oh, well, we had all been midshipmen once.

I remember a day's shooting many years before near Butrinto, but a little more to the northward at Santa Quaranta. I was in the *Empress of India*, and we and a small ship with Captain Alfred Paget in command were lying off Corfu. The Turkish Consul at that place refused to give us permission to shoot on the Turkish coast unless we paid him an exorbitant sum. So Paget and I started off early one morning in a steamboat and called on the local Kaimakan at Santa Quaranta. Paget had wisely donned his order of the Medjidieh, although in shooting kit, so we got his permission and our day's shooting in spite of the attempts of the Turkish Consul at Corfu to have us stopped. The one thing that remains fixed in my mind is the splendid twenty minutes we had with driven snipe. We had laboured up a paddy field sinking at each step above our ankles in mud, with wisp after wisp getting up seventy to ninety yards ahead. But when near the end of the cultivated area we were rewarded, for the snipe, having nowhere to pitch except in this large field, began to fly back over our heads in wisps, and two or three at a time, and we had, as I have said, a memorable twenty minutes.

Alfred Paget, generally known as 'Tin-eye' Paget, as he sported an eye-glass, was responsible for performing what was at that time considered to be a very plucky act; and, indeed, so it was, when we recognize the fact that aeroplanes had not been invented, and aeronautics were in their infancy.

One day in his club in London conversation turned on the danger incurred by aeronauts in going up in balloons and dropping down to the ground in a parachute. Paget said he saw nothing in it. This rather nettled one member who bet him some sum, one hundred, two hundred, or five hundred, I forget which, that he would not go up in a

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balloon and do the same. He took the bet, hired a balloon and parachute, made an ascent and duly came down safely. Of course, the same thing has since been done hundreds of times; but, when one comes to appreciate that Paget was in no way an air expert, that he had, I suppose, never troubled his head why a balloon went up or why a parachute came down slowly; and had had no previous training in ballooning, it will be agreed that great nerve was required to make the attempt. This was the sort of thing that Lord Charles Beresford would have thoroughly enjoyed doing.

We stayed a few days at Platea, a place well known to the Navy, since, for many years, it had been the place where the Mediterranean Fleet exercised most frequently with Whitehead torpedoes. In the memories of the older officers it was associated with the grounding of the ill-fated *Victoria*, which ship ran on to a shoal while firing torpedoes.

I well remember a yarn which was circulated through the Navy after she had been floated off. This told how several attempts had been made to haul her off, how the tugs pulled and the capstan engines groaned, how every effort had failed until the very popular Commander-in-Chief, Sir George Tryon, a man of considerable physical proportions and ample girth, accidentally fell overboard from the steamboat in which he had been watching the operations. Then, so the report said, the mighty wave raised by his large displacement just turned the scale in favour of success by raising the level of the sea, and off came the ship!

The following story, duly bowdlerized for publication, was told me by a captain of an incident that happened to him during some night manœuvres in the channel adjoining Platea harbour.

It was the very devil of a night; raining and blowing, and as dark as pitch, and his ship was somewhere in amongst the reefs and islands that flank that wicked channel. No one knew exactly where the ship was, nor could the keenest eye see more than a cable's length. My friend was clad in an oilskin suit, sou'wester, and sea-boots, in which rig officers are indistinguishable from the men. About midnight a leading signalman sidled up to the Captain, who was stand-

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ing on the bridge, and, thinking he was addressing the yeoman of signals, said :

" If I was the old bounder I'd keep out in the middle of this ruddy channel."

My friend, a person blessed with humour, replied :

" That's exactly what the old bounder is going to do ! "

Of course, the young signalman recognized his voice and fled. My friend told me that for a fortnight he never saw that leading signalman, except once, when the man poked his head up a hatchway, and saw the Captain ; then, in his horror and haste, he collapsed and fell down the ladder on to the lower deck !

I cannot say that I was pleased with the state of the *Irresistible* when I joined her. She was passable both as regards cleanliness and general efficiency, but did not come up to the standard of the *Empress of India* nor of any of the battleships I had known in the Mediterranean in 1900. The *Bulwark*, the flagship, judged by this standard, was distinctly slummy. It was the reverse of a pleasure to go on board her, remembering as I did the immaculateness of the *Ramillies* when Jellicoe was her commander. My first work was to get the *Irresistible* up to my standard of cleanliness. So we holystoned the decks every morning for a fortnight, after which the mottled purple patches grew smaller and smaller and the wood appeared between them. Every day the men were exercised and smartened up. But it took me nearly three months before the ship was clean and the men smart. No ship can be smart and happy unless the men take a pride in her ; and no man can take a pride in his own ship if when he visits another he finds that his own fails in comparison.

Before leaving the *Irresistible* I asked the Commander-in-Chief to dine. He was so struck with the appearance of her quarter-deck (and well he might be when he called to mind what his own looked like) that he promised to try for the promotion of my First Lieutenant, who was acting as commander ; but, unfortunately, I had left before the time came for the names of officers to be forwarded with recommendations from the Commander-in-Chief for the annual promotions.

The ship's company were a good lot of men ; but at

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first they wanted gingering up. They didn't move with the alacrity to which I had been accustomed, but this was soon put to rights.

Discipline in tabloid form may be said to be doing what you don't want to do and doing it at once! This reminds me that, years ago, my Father, when talking to a boy in some village, found out that there was only one bedroom and one bed in the cottage for father, mother, and four children.

"Don't you find it rather close quarters?" asked my father.

"Oh! It's all right, sir," said the boy. "Father says 'turn' and we all turns."

This is a good example of family discipline.

One of the most weird of all the many thrilling experiences that have fallen to the lot of men at sea, from the time of Noah down to the present day, was that which befell the survivors of a torpedo-boat that foundered in the Mediterranean in 1906, while being towed by a cruiser from Alexandria to Malta.

It is customary in the Navy to court-martial the officers and men who survive the loss of a man-of-war. This is not done from any idea of bringing home blame to them; but, rather, to obtain under oath an accurate account of the disaster. The usual court-martial was held and I was appointed prosecutor.

I well remember the occasion. The weather was hot. The Court sat in the *Hibernia*; and, when we assembled, it was with a feeling of boredom that we set about to carry out a perfunctory inquiry, little expecting to hear sensational details.

The Lieutenant who commanded the boat and a warrant officer were the prisoners. All persons arraigned before a court-martial are called 'prisoners,' not 'the accused,' as one might expect. In fact, they are, during the trial, under arrest.

There were only four survivors, the two officers, a leading stoker, and another seaman. The leading stoker gave his evidence in a matter-of-fact way. Just a plain statement without any embroidery. A style which rather added to the effect it produced. He was a man of fine appearance. He

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said that on the night in question he was down below asleep in his bunk, when he felt himself thrown on to the deck. He picked himself up, rather dazed, and felt for his matches in the pocket of his jumper, which he was still wearing, and struck a match. At first he could not understand clearly where he was, for the whole mess-deck looked different from usual. At last, in the dim light of the flickering match, he made out that everything was upside down. In his evidence to the Court he described his discovery and said:

"I turned to my mate who I saw sitting down, and said: 'My God, she's capsized.'" So, in truth, she had. There he was standing on the underside of the upper deck, with the mess-deck, on which he usually walked, over his head, and the sea water up to his ankles. For all he knew, the boat might be sinking rapidly to the bottom, or it might already have arrived there, in which case all chance of escape would have vanished, since the hatchway would be lying on the mud and there was no other exit by which to leave the boat. It is difficult to imagine what the realization of the predicament that they were in must have meant to these two men when, suddenly, they found themselves awakened from their sleep, and brought face to face with a terrible and hitherto unimagined situation. The shock acted differently on the two men.

"I turned to my chum," continued the leading stoker, "and said: 'We must get out by the hatch'; but, I saw he had covered his face with his hands, and was a lost man. I said 'come on,' but he wouldn't move, so I left him."

The narrator was full of grit. He felt with his feet for the hatchway, dived down, and swam, down and down, until he thought that he was low enough to clear the stanchions and upper-deck rails, which were now sticking downwards into the water below the upper deck. Then he swam outwards towards the boat's side until he judged he was clear of the upper deck, and rose to the surface. He found that the boat was still floating on the surface, bottom up, so clambered on to the bottom. There he found the two officers and one man who had also escaped. They were the sole survivors. Every man on the upper deck had been swept away and drowned the moment the boat went over.

The cruiser, noticing that the tow-ropes had parted,

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turned round to see what had happened. She fortunately sighted the torpedo-boat in the beam of her searchlight, and was in time to take the men off before it sank.

The cause of the capsizing is easily explained.

The only secure place to which a hawser could be made fast, on board a torpedo-boat, was the conning tower. This erection is some distance from the bow of the boat. It is therefore necessary to lash the hawser to the eyes of the boat, so that its pull in towing will come right forward at the stem. This was done on this particular occasion; but, undoubtedly, the lashing chafed through. The moment this happened the boat sheered off, the hawser tautened out on the beam of the boat, and as the conning tower was some height above water, the boat was lurched over and capsized.

The inquiry had a miserable ending. Both officers were below, asleep. The defence developed into a wrangle as to which officer should have been on deck. I longed to throw up the prosecution and take over the defence; for I was convinced that I could have succeeded in getting both officers acquitted. If the Captain had merely said that he had told the gunner to rest, and that he himself wished to take advantage of the fine weather, and of the boat being safely in tow, to rest himself in case bad weather came on during the four days they would be at sea, I am certain that the Court would have accepted this defence.

It was a good illustration of the principle that a senior should never shift blame on to the shoulders of a subordinate. There are, of course, plain, straightforward cases where a subordinate is entirely to blame; but, whenever responsibility may be, even remotely, joint, then the senior should shoulder the lot.

The same applies when reprimanding, although the principle involved is different. Never go for the junior. Always, when possible, jump on the senior. He will pass on the rubbing-down to those below him; you will therefore catch more in your net this way than by any other means.

One incident of purely naval interest remains in my mind of my time in the *Irresistible*.

The Fleet arrived one morning about 7.30 a.m. off Naples and moored. In easing out our mooring swivel one

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of the outboard links of the monkey face[1] snapped, and the cable fell to the bottom in about twenty fathoms of water. It was useless to think of grappling for it with a grapnel. So I veered the ship astern until our hawse-pipes were roughly abreast of the centre of the lost cable. In the meantime I had the sailing launch hoisted out, and laid out the large kedge anchor well on the far side of where I knew the cable to be. The hawser from the kedge was then taken through the hawse-pipe to the capstan and this small anchor used as a grapnel. I had the missing cable up to the hawse-pipe by 8.30 a.m. and the ship was moored shortly afterwards.

Some years afterwards I was glad to hear from one of my officers[2] that he had met with a similar accident, and, remembering our Neapolitan experience, he had copied my method and quickly recovered his anchor and cable.

The golden rule to follow, when faced by an emergency, is 'don't mess about, use strong measures.'

As is often the case at sea, even the few months I spent in the *Irresistible*, only five in all, did not pass without incident.

A little trouble with Turkey cropped up, and such ships as were not in dockyard left Malta hurriedly for the Levant. Lord Charles Beresford hoisted his flag in the *Formidable* and Vice-Admiral Sir Francis Bridgeman transferred to the *Irresistible*.

On leaving harbour we had a near shave of leaving our bones on the Valletta Marina.

We were moored bow and stern at the cruiser buoy with the *Formidable* right ahead of us. Both ships were facing seawards. The *Formidable* slipped and went ahead with her engines. I waited for her to get a cable and a half away, and then I slipped also, but I found the bow of the ship paying off towards the shore; and that neither the propellers nor helm, nor both together, would check the swing. The only thing to do was to grit my teeth and go full speed ahead, and even so it was some time before I could get her head off the shore. How close I went to the shore I do not know,

[1] The monkey face is a heavy plate pierced with three holes, one for the link of the swivel and the other two for the two chain cables.

[2] The late Captain J. A. Moreton, C.M.G., D.S.O.

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nor do I care to know; but had I hesitated fifteen seconds the *Irresistible* would have piled up on the Marina. The cause of the trouble was a simple one; the wash of the *Formidable's* propellers, in the shallow water, acted like a mill-race against the bow, forcing it towards the shore, which action it was impossible to counter with the helm until the ship had gathered considerable headway.

But, as luck would have it, I had an even closer shave next time I left harbour. It happened in this way. The Fleet was ordered to leave at 4 p.m. The *Irresistible* was lying at the old troopship buoy heading up harbour. It was blowing a whole gale from the Marsa. The *Irresistible* class had in-turning propellers, which involved one great defect; namely, that if there was a breeze blowing, unless they had good way on, they always refused when turning to bring their sterns up to the wind; they merely lay broadside on to the breeze and no action on the part of the propellers or helm would make them turn.

Under such weather conditions as existed it would have been impossible to turn the ship completely round in order to head out of harbour without the help of a tug. I therefore asked permission to turn the ship by means of hawsers so as to lie stern up the harbour. In such a position it would be easy enough to leave at the proper time in my proper station with the Fleet. No sooner had I turned the ship than the wind shifted and came strong off the granaries at Floriana. This, however, did not, for the moment, affect me. When the time came for the Fleet to leave, the *Bulwark* slipped from the flagship buoy and tried to turn up against the beam wind. She failed, and to give her room I was told to slip and lead out the Fleet. This I commenced to do; but, on going astern, the wash of my propellers caught the starboard bow of the *Bulwark*, and gave it the necessary push to force her up to the wind (the same mill-race effect which nearly put me ashore on the previous occasion). She was therefore in a position to leave the harbour. Lord Charles Beresford then told me *to stay where I was* and come out in my proper order. Here was a pretty kettle of fish! Stay where I was! Adrift in the Grand Harbour for some twenty minutes with a gale of wind on my beam and all the ships getting under way, and the manœuvring space

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studded with mooring buoys! The net result was that I nearly fetched up into French Creek; and, in the end, I had to have the assistance of a tug to help me round. I thanked my stars, before I had ended manœuvring the ship, that the shores of Malta harbour were so phenomenally steep too!

When we did at last clear the harbour we were told to go a hundred miles ahead of the Fleet to carry out wireless trials. So off we pounded in the teeth of the gale, steaming faster than I should have done had it not been for my stationing orders. At about 9 p.m., when abreast of the island of Gozo, the ship dipped her nose into the trough of a wave and took in a huge sea over the foc's'le. It washed away the forebridge steering shelter, knocked down the helmsman and officer of the watch, bent our solid steel fore bulkhead, lifted a small skiff on the booms into the Captain's gig and did a lot of other damage. I had my neck cut by the broken glass. So severe was the shock that those in the engine-room thought we had struck a rock. Needless to say that, after that, I eased down speed a bit. The next morning I found my watch had stopped and the hairspring and other parts were rusty. So I took it to pieces, dried the works, and reassembled them. After returning to England I took the watch, which was an heirloom, to a well-known watch-maker in London and asked him for an estimate for the repairs. He took ten days to supply it and then asked £15. For many years I had tinkered with watches, and knew the figure to be exorbitant. So I suggested to him that I could buy a new watch for the sum he asked. He replied: "A matter of sentiment, a matter of sentiment!" I replied that my sentiment didn't run to £15, and took it to the Army & Navy Stores, who put it in thorough order for £3 10s., and it has gone perfectly ever since.

On arriving at Gibraltar we joined up with the Atlantic and Home Fleets for manœuvres.

One operation remains in my mind. Rear-Admiral Hedworth Lambton was given command of the Mediterranean battleships, and stationed to the southward of the other two fleets, which were under the command of Vice-Admiral Curzon-Howe. Lambton's orders were to try to break through Curzon-Howe's command during the night, in order to reinforce a hypothetical Admiral to the north-

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ward. After effecting this junction the ghostly Admiral would then be strong enough to engage Curzon-Howe's fleet with superior numbers.

Towards evening Admiral Lambton called the captains on board his flagship to explain his plan of action. He proposed that each ship should carry double side lights,[1] so as to confuse the enemy, and our fleet was to make a dash to get through. He then asked all of us for remarks; and, being the junior captain, I waited till the others had had their say. I then stated that it seemed to me that the problem was a strategical, and not a tactical one; therefore the crucial point to be kept in mind was, that it was our business to get as many ships through to join our shadow Admiral as possible. It was useless for us, being so inferior in numbers, to think of engaging Curzon-Howe's fleet, and as there was to be no fighting there was no need to keep our ships together. It would, therefore, be far better to separate our fleet with the ships some five miles or so apart, and sneak through in that way. The enemy would never suspect that we would adopt so novel a procedure. Our ships would be certain to strike the enemy's line at different times and at different places, and the varied and seemingly conflicting reports that the Admiral would receive would undoubtedly lead to confusion and to a constant change of orders being given to the enemy's forces. This scheme was adopted, with the result that only one of our ships was stopped and theoretically sunk. All the others arrived safe and sound at the rendezvous.

We, in the *Irresistible*, had a most exciting night, the most exciting I have ever had in peace time. The first thing I did was to rig up a third funnel, made from a sheet of canvas, for I knew, from experience, that the most amateur form of camouflage is likely to succeed at night.

On approaching the place where we expected Curzon-Howe would have extended his fleet we took in a flashing signal 'Interrogative C.' This evidently was the challenge for the night, and shortly after another ship replied 'H.' This undoubtedly was the countersign. Naturally I gave orders to flash 'Interrogative C' if ever a vessel was sighted;

[1] The use of side lights was made compulsory by Admiralty order so as to prevent the chance of collisions.

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and to reply with 'H' if another ship became insistent. We found, as I had expected, that Curzon-Howe had strung his fleet into one long line with the ships well apart, but not sufficiently so for me to slip through. The next thing of interest was that one of his ships reported the presence of the American three-funnelled cruiser *Tehuantepec*. That was the *Irresistible*, with my three funnels. Evidently the High Command disbelieved the presence of this ship; but, scenting an enemy, detailed a ship to sink us. Fortunately for us, she was told to go to the place where we had been when sighted, but not to that in which we then were. Wireless signals reporting the presence of ships of our fleet in different localities kept coming in and ships were sent chasing about; and, once more, a ship was sent to sink us, but on her approach I flashed the demand signal which rather put her off her stroke. She challenged but I paid no attention, and eventually she sheered off. Then to our amusement we took in the Commander-in-Chief's query: "Have you sunk the suspicious vessel?" Reply: "No." Query: "Why not?" Answer: "Because she would not answer the challenge." What was meant by this remark remains a mystery to me to this day. However, I sailed in company with the enemy until 3 a.m. and then slipped through.

The experience opened my eyes to the difficulties of night operations, when enemies and friends are in contact, and the uselessness of challenge and reply signals; and I learnt much that proved useful to me during the Great War.

Lord Charles adopted the excellent practice of occasionally turning over the command of the Mediterranean battle fleet to be manœuvred for tactical exercises by each of the battleship captains in turn. The evolution lasted for about one and a half hours. My turn came in due course, and I used the time at my disposal to carry out an amplified form of a manœuvre which I had learned from Sir Gerard Noel. There was, of course, nothing remarkable in the manœuvre except that, although thoroughly safe, yet, to a novice, it appears that a series of collisions is bound to occur.

I had brass models cut of the turning circles of the ship for different speeds. These were most useful as they reproduced the 'advance' as well as the actual diameter of

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the circles. This is a matter of great importance if a neat manœuvre is to result when taking station astern of another ship, especially when approaching on an opposite course. A few days' study and practice with these enabled me to carry the essentials of the curves in my head, so that the exact bearings and distances at which to put the helm over at different speeds were easily memorized.

The other incident which is stamped in my memory was a lecture on 'Curve of Search Tactics,' which was given by Sir Arthur Wilson, after the conclusion of the manœuvres, to the admirals and captains at Gibraltar. It was a most masterly exposition.

In those days I was younger than I am now and I thought I knew a great deal; a complaint that I have more or less got over since, but this lecture I well remember came as a wholesome douche and showed me how much less I knew than I thought I did. In fact, I may say that all of us, captains and admirals alike, sat like schoolboys under an able tutor.

Shortly after I took the *Irresistible* to Gibraltar, and left her for England, Lord Charles making a most friendly signal on my leaving the Fleet.

I have already referred to a long letter[1] I wrote to Sir John Fisher, from the Mediterranean, regarding his proposal to nominate a committee to examine the status of engineer officers. In it I stated what were my convictions, and asked him to delay the date of assembly of that committee and also to appoint me as a member. He most broadmindedly did both of these things, although he knew full well that I was opposed to his proposals. We had an interesting time ascertaining the views of the senior and other executive officers as well as those of the engineering officers. The claims of the latter were in some cases extraordinary. Although without any training as seamen, claims were put forward for engineer officers to command our ships of war; and one ingenious officer suggested that the engineer officer, if senior to the captain, should command the ship in harbour, but that the command should revert to the seaman captain on going to sea! Changes in uniform were suggested, with the whole object of making the uniform

[1] Page 127.

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of the engineers indistinguishable from that of the executive officers.

The majority report agreed with the views held by Sir John Fisher. However, the three captains[1] on the committee wrote a minority report in which we did not hesitate to dot our i's and cross our t's. In unvarnished language we pointed out that uniforms were devised to distinguish the ranks and services of officers and not to confuse such differences. In fact, we interpreted in plain English, using somewhat forcible arguments, what had been the gist of the evidence of the executive officers who had come before us as witnesses.

The result was that the majority report was quashed. The Admiralty did not dare to publish the finding of the committee since they would have been bound to publish our minority report. This they feared to do, as it tore the majority report into shreds.

Sir John was very angry. He had made certain promises to the existing engineer officers in order to smooth the way for them to agree to the new system of common entry, which by our report he was no longer able to fulfil.

We dissentients each received a reprimand from the Admiralty for the rather unconventional language in which our minority report had been couched; but I cannot say that 'My Lords' displeasure' lay very heavily upon us. However, so far as I was concerned, I do not think Sir John ever quite forgave me for my share in his disappointment.

I have never known another case where a minority report killed so instantaneously—I cannot say, painlessly—that signed by the majority of the members.

[1] Captain Spencer Login, Captain Charles Briggs, and myself. Captain the Hon. Hugh Tyrwhitt left before the committee reported, but he expressed himself in agreement with the minority report.

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Chapter VIII

H.M.S. 'DREADNOUGHT'

SIR JOHN FISHER DEVOTED A GREAT DEAL OF HIS STUPENDOUS energy to ensuring that the *Dreadnought* should be built and ready for trials within a year. In this he was ably supported by Mr. Thomas Mitchell,[1] the Chief Constructor of Portsmouth Dockyard.

Jackie Fisher was well known in Portsmouth Dockyard. As Admiral Superintendent he had managed to have the *Royal Sovereign*, battleship, built in two years instead of the four years that had previously been necessary for that class of ship. He was ubiquitous; and, learning from the charge hands one or two names of the workmen, he would casually address them by name and congratulate them on the progress made. The result was that the story spread that the Admiral Superintendent knew the names of all the workmen, which certainly was a fillip to labour. In fact, it was said that it was only necessary to whisper his name in the ear of any of the stately dockyard horses for them to move with redoubled energy and almost break into a canter!

Parenthetically, this reminds me of a happening for the authenticity of which I can vouch. During the Great War one of the young women who nobly elected to work on the land and who was blessed with more energy than experience, was so anxious to complete a certain piece of ploughing before dark that, towards eventide, she whipped up the team into a canter to try complete the last few furrows in her allotted time!

But to return to Portsmouth Dockyard. When Fisher said that the ship was to be built in two years everyone

[1] The late Sir Thomas Mitchell, who had succeeded Mr. W. H. Gard as Chief Constructor at Portsmouth when the latter followed Sir John Fisher to the Admiralty.

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worked with increased energy in order to avoid unpleasant consequences.

The hull of a ship can be pushed on, and the ship launched, in a comparatively short time. In the case of the *Dreadnought* the keel was laid on October 2, 1905, and she was launched on February 10, 1906, just a week over four months. After this the armour had to be put in place and the engines, gun mountings, and all accessories installed. The turrets and the gun mountings take longer to construct than any other item of the equipment of a ship. In order to keep to the one-year programme, the turrets which were already under construction for the *Lord Nelson* and *Agamemnon* were commandeered. In the end the one year was adhered to, and the ship left for her trials on October 3, 1906.

About April 1906 Captain the Hon. Hugh Tyrwhitt was offered, and accepted, the command of the East Indies Station, so I was nominated to command the *Dreadnought*, and joined her in June. This gave me ample time to assist in arranging the details of such parts of the equipment as would benefit from practical sea-going experience.

The only improvement that I could not persuade the Admiralty to adopt was to abolish the long fore bridge, which ran for the whole beam of the ship. From experience I had gained in the *Irresistible* I knew that the best place from which to con the ship was the centre line, and not from the extremities of the bridge. This was heresy in those days, for it was generally taken for granted that, in going alongside a jetty, it was necessary to run to the extremity of the bridge to determine the distance of the ship from the wall. This was on a par with saying that a chauffeur must at times look out of the nearside window in order to come properly alongside the front-door steps. The eye soon becomes accustomed to allow for the width of the car, or the beam of a ship. In the end I succeeded in having the wings of the bridge made movable, so that they could be removed before going into action. They then, at least, could not fall down and jam the underlying turret.

When the ship was leaving the basin for her trials, to the surprise of everyone she stuck in the entrance. There was plenty of depth of water, but the shape of the entrance

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had been designed many years before, when the sections of the ships of that period were more slim, and did not have the *embonpoint* of the *Dreadnought*. Fortunately, we still had an hour's rise of tide, and at dead high water she just scraped through. What a setback it would have been, and what a joy to Fisher's enemies, if it had turned out that the *Dreadnought* had been completed in a basin which had an entrance too small for her exit, and that it had been found necessary to remove her turrets in order to allow her to pass out! As a matter of fact very little more constriction of the entrance would have necessitated this reduction in weight.

It was an exciting moment when steam was first put on the turbines. Only a couple of days before the engine-rooms had looked like lumber-houses, but had since been tidied up. What would be the behaviour of those great masses of machinery, bigger than any that had ever been previously manufactured? How would they work? The clearance between the thousands of blades on the rotating and static drums was a matter of a few thousandths of an inch only. One defective blade might become loose, come out and strip the rotors completely. Tales were extant of cases where blades had been baled out of turbines by the bucket-full.

Steam had to be let in gently so that the whole, rotors, casings, and blades, all rose gradually together to the same temperatures so as to cause them to expand equally. Then steam pressure was admitted, and the rotors began to move. One turbine grunted, generating a wave of pessimism; but a skilled engineer, with one end of a piece of steel held in his teeth, rested the other end on the turbine casing, and, to the relief of all, pronounced all to be correct. This novel stethoscope was singularly sensitive to vibrations, which could be felt more keenly by the teeth than by the fingers.

Well, all was correct, no trouble was experienced, in spite of those initial grunts, and the turbines, for the whole of their natural existence, never gave an instant's trouble.

On October 3 we started the acceptance trials, for which I had made out a programme based on the expectation that they would last three weeks. This gave several spare days for opening up and overhauling of machinery, should it

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H.M.S. ' IRRESISTIBLE '

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prove necessary to do so. However, things went so well that we had finished the trials in ten days, having had a delay of one hour only owing to having to replace a small pipe leading to a pressure-gauge.

One very important matter came to light; for, when steaming at full speed on the measured mile, it was found that the turbine working the centre shaft (there were three shafts) was developing a hundred per cent more power than the figure for which it had been designed. The shaft had, I imagine, a factor of safety of round about 8; but I saw no reason to take any risks, for a defect of this nature was one of design and not of type. In other words, the matter could be easily rectified in future designs, and did not, in any way, show that the type of engine was at fault. I therefore cut the full power trial short, running four runs only over the measured mile. These were sufficient to get all the data required.

Had we had an accident, the ungodly would have at once raised a hue and cry against the ship, her designers, and her design.

Another trouble which I tumbled up against was the fact that her steering arrangements were most unsatisfactory. The ship turned magnificently; but if when she was steaming fifteen knots the helm was put over more than 10 degrees, the steering engine was not powerful enough to right the helm, and bring the rudder amidships. The fault lay in the rudder being overbalanced. Let me explain. A rudder is a flat plane; when this is inclined at an angle to the fore and aft line of the ship the water which presses against it, owing to the speed of the ship through the water, tries to push the plane sideways, and therefore the after end of the ship is also pushed sideways, and this causes her to turn. With an ordinary rudder which is pivoted at the forward edge, some considerable force is required to incline the rudder against the pressure of the water, which is always trying to rotate it back to its central position. In order to counteract this, large rudders are not pivoted at their forward edge, but at some distance abaft it. A balance is thus produced; the water before the pivoting place tries to rotate the rudder in one direction, and that abaft the pivoting place tries to rotate it in the reverse direction,

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therefore tending to balance each other. Both pressures, however, push the stern of the ship round. In the *Dreadnought* the pivot was too far aft, so that the push on the fore part was so much more than on the after part, that the engine was not able to rotate the rudder back to its central position. The practical result of all this was that the ship became completely out of control, and continued to turn in a circle, long after it was desirable for her to be steadied on a course.

I saw that it would be bad for the prestige of the design if alterations, which were bound to occupy some considerable time, were taken in hand. I also knew that if I reported the defect the Admiralty could not possibly allow the ship to go on her projected trial to Trinidad before having the defect put right. I therefore said nothing at all about it until the ship had returned to England after completing her trial cruise. I gave orders that no more than 10 degrees of helm, that is, one third of the total possible, was to be used except in the case of emergency. Of course, occasionally, we turned circles, one I remember especially in the Straits of Bonifacio between Corsica and Sardinia; but all went well, we never had an accident, and the defect was not taken in hand until after I had left the ship.

A very wise Secretary of the Admiralty once pointed out to me that a cardinal principle in Admiralty administration was that the Admiralty should never place itself in a position to incur blame. The Admiralty, as a body, should always avoid taking responsibility; it is for their subordinates to do this. The Board cannot afford that the 'Office of Lord High Admiral' should gamble with chance. The Admiralty must always be able to clear itself in the eyes of the British public by having a scapegoat on to whose shoulders they can transfer all blame. Unless a policy of this nature is adhered to the Admiralty would be continually running the risk of appearing to be at fault, consequently it would, as an institution, fall low in public opinion.

Occasions sometimes occur when the individual should take a responsibility and run risks which the Admiralty dare not. This was one such case. Had an accident occurred, and had it been known that the Admiralty had wittingly allowed a ship, especially the new *Dreadnought*, to go to sea

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with defective steering gear, the reputation of the Admiralty would have suffered, but with the Admiralty ignorant, my head would have sufficed to appease the British public.

After taking command of the *Dreadnought* my brain, naturally, applied itself to thinking out all situations with which I might be called upon to deal. One of the most important of these was how to act after damage had occurred to the ship below the water-line.

I offer no excuse for dealing with the matter at some length, because stones have been cast at the design of our battleships, since it was clearly proved, in the Great War, that the German battleships were less liable to be sunk by damage below water than were those designed by our constructors.

It is common knowledge that the vitals of a ship are subdivided into watertight compartments formed by bulkheads running at intervals across the ship; and, in some cases, as in that of the *Dreadnought*, a main bulkhead running fore and aft, along the centre line of the ship. Any one or more of these watertight boxes might become flooded, either by collision or damage in action from torpedo or mine. The ship would then do three things: first, list over to a certain angle; secondly, sink a certain amount bodily in the water; and thirdly, rise or fall somewhat by the stern. It was generally assumed that the list of the ship, and her fore and aft trim, could be corrected by flooding some other compartment in another portion of the ship; but I saw that this would add to the total amount of water taken into the ship, which would therefore increase her immersion, and, what was of greater importance, thereby reduce her stability and make her liable to capsize. Obviously, it was necessary for me to know, in the event of damage to any of the main compartments, what was the correct action to take with regard to flooding additional compartments.

I had never been a lover of fore and aft watertight bulkheads fitted in large compartments, as these would inevitably lead to the ship, when damaged, heeling over considerably, and I now had an excellent opportunity of bringing the matter to official notice, and obtaining an official ruling on their value.

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I landed a bombshell into the department of the Director of Naval Construction by writing a note naming four compartments, and asking for advice in case any one of these became flooded.

My first communication was purely departmental, and I was not astonished when I received a shuffling reply; so I then wrote officially through the Commander-in-Chief, which meant that the letter would have to be placed before the Board. In the letter I said that I knew it would not be the wish of Their Lordships that I should go to sea in a ship of so new a type, for an experimental cruise, without the information necessary to take proper steps in case of an accident.

I heard afterwards that my letter had indeed acted the part of a stick in an ant-heap, for my questions could not be answered without showing the very dangerous state of the method of compartmentation which had been adopted. The answer I received was a very sketchy one which, in plain English, advised taking no action at all; with this I had to be content. But the Board of Admiralty had had their attention called to a defect in design, against which it was the duty of the naval constructors to guard in future.

The only real solution was that adopted by the Germans, viz. to subdivide the space below much more thoroughly; but this militated against the efficiency of the ship from the point of view of habitability. Our battleships might be called upon to operate in the Far East as well as in the North Sea. Those of Germany were never called on to be absent for more than twenty-four hours from their naval ports and barracks. The design of our ships had to be a compromise therefore between extent of compartmental subdivision, and habitability, while the German ships had no reason to take the latter into account.

On December 29, 1906 we were blessed by a third increase in our small family by the arrival of a little daughter, whom we christened Dorothy Cicely. Years after, when my mother died, I wished to perpetuate the old family name of Lavinia, redolent of Georgian and early Victorian days, so at her confirmation this name was added to the other two, and she became at least the fourth in direct succession to hold the name.

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After opening up the engines, inspecting them, and re-closing again, we left for the first part of our experimental cruise. I called at Aranci Bay, where the Home Fleet, under the command of Sir Arthur Wilson, was lying, in order to pick up Lieutenant Dreyer, who at that time was looked on as a great gunnery expert, second only in the Navy to Admiral Sir Percy Scott. In fact, he was probably more up to date than that renowned Admiral.

For years Percy Scott had been preaching the necessity for increased gunnery efficiency, and had invented numerous instructional appliances. But the trouble was that so long as short-range actions were the order of the day, it was difficult to get senior officers to take a real interest in gunnery practice. Ships seemed to be so large a target at three thousand yards range, that it did not seem probable they could be missed. Then there was always that fatal hereditary optimism which had indelibly stamped on the minds of officers a belief that, since the British Navy had never been beaten, British pluck was all that was required to beat the navy of any other country, even should our peace-time gunnery leave something to be desired.

The homilies of Percy Scott did a world of good, but unfortunately he was rather like the Old Testament seers, who rubbed those in authority the wrong way. Officers of high standing did not appreciate being told that for years they had neglected gunnery training, and that they should repent and do better. Percy Scott did not know how to gild the pill; so he met with more opposition than would have fallen to his lot had he been more diplomatic. Nevertheless, the Navy owes him a great debt of gratitude for all he did towards increasing our gunnery efficiency; and, by no means least, for having invented the system of director firing which proved so useful at the battle of Jutland.

Lieutenant Frederic Dreyer was entirely different; he carried his knowledge less aggressively, and, therefore, did just as good work in the cause of gunnery without raising factious opposition.

Our first cruise took us to Gibraltar and then to Aranci Bay, on the north coast of Sardinia, and back. This was merely a preliminary run to break in the engine-room staff.

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On returning to Gibraltar we completed with coal and started for our run to Trinidad. Trinidad had been selected by Sir John Fisher as a suitable place to carry out our trials. Port of Spain boasts an enormous harbour, in fact it is a small inland sea enclosed between the western coast of the island of Trinidad and Venezuela. No better place could have been chosen. We had to lie when at anchor several miles from the town, but this did not matter, as we were nearly always under way.

It is needless to deal with the trials beyond saying that every form of test of the ship and armament was carried out. The final report compiled from the data supplied me by the Gunnery, Torpedo, and Engineer Officers ran to some three hundred pages; and, on the whole, was satisfactory to the ship. The main point suggested for improvement was raising the armour belt and making the water taken on board from damage to the ship's side close above the waterline less liable to find its way below.

There is a vast difference between examining the plan of a ship, and standing on each deck of that ship when she is pitching, rolling and scending in a seaway. I had little doubt, when watching the behaviour of the ship at sea, that quite a medium amount of damage in action to the *Dreadnought* would have made it very difficult to keep water from filling the lower spaces of the ship which were in communication with the main deck, a matter that was by no means so apparent when examining the paper design.

We were offered a considerable amount of hospitality during our stay, but work prevented us from indulging in much relaxation; we had the pleasure, however, of entertaining a large number of the inhabitants of Port of Spain to an 'At Home' on board.

Being anxious to test the position of our searchlights I took the ship at night into a small harbour, creek almost, in which there was just room for the ship to swing at anchor. As a preliminary I first entered the harbour during daylight in order to note leading marks, etc. I suppose our anchor was the first that had been dropped in that desolate spot since buccaneering days; at all events it stirred up the largest shark I have ever seen: a great white-bellied

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brute who rose to the surface to see what the dickens had happened to disturb its habitual quiet.

Having completed our work we coaled, and left for England. As a matter of fact I had hoped to take Lady Jackson, the wife of the Governor, to a neighbouring island, as his aide-de-camp had died of yellow fever; but we had used so much coal during our trials that I found, before leaving, that I had barely enough to take the ship to England, so with great regret I had to cancel my invitation.

The coal question threatened to become a serious matter. I was anxious to make a clean run to England without calling at any intermediate port, but if bad weather came on and the speed of the ship fell I would be forced to do so. Moreover, after one week at sea an immediate decision would have to be taken; since after then neither the Azores nor Lisbon would have been within our radius of steaming.

A couple of days or so after leaving I went down with an attack of my old Benin fever: a malarial fever of which I had had a recurrence every spring since my original attack in 1897. I developed a temperature of over 103 degrees, and I knew it was useless to attempt to keep a clear head if such a temperature persisted, so I turned over the command of the ship to Commander Evans, warning him to watch the coal consumption.

After another two days I was told that the ship had lost about two knots speed for the revolutions she was making. This persisted for about two days, when the ship recovered. I might have known the cause after my experience in torpedo boat No. 81, when the plating stripped off her rudder. The same thing had happened to the *Dreadnought;* the vibration, and wash, of the centre line propeller had loosened the rivets of the plating, and the plates of the rudder opened out like two wings and formed a drogue which had reduced the speed of the ship.

When we arrived at Spithead we had only eighteen tons of coal left in the ship, or enough for about four hours' steaming, rather a close margin for a four-thousand miles or so passage of ten days' duration.

On opening up, the main propelling machinery was found in perfect condition. The auxiliary reciprocating engine required, however, the usual amount of adjusting.

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After leaving dockyard hands we hoisted the flag of Vice-Admiral Sir Francis Bridgeman, the Admiral commanding the Home (Reserve) Fleet. During the time I remained in the ship we carried out a cruise with the Home Fleet, ending up with a monster review at Spithead.

On Admiral Bridgeman hoisting his flag I became his Chief of the Staff as well as Flag Captain; this was all right when we merely cruised as a Reserve Fleet; but, later on, when we assembled for the Review, I was greatly overworked and had little time to attend to the ship, the whole of my day's work being taken up with Fleet matters. There is no doubt that the two posts should have been divided and that each should have had a separate officer to carry out its duties.

The Fleet was inspected by King Edward VII, who, as part of the Review, came to sea in the *Dreadnought* for a trip round the Isle of Wight, or rather to the south-western end of the Island and back again. Originally we intended to make a round trip; but, having been delayed at the start, we would have had only one foot of water under the keel when rounding the S.W. shingle buoy at the entrance to the Needles channel; so I asked for permission to return the way we had come.

One foot of water was too small a margin when the bad qualities of the steering of most ships in shallow water was taken into account.

The King was both interested and pleased to find himself on board a man-of-war flying all three of his flags for the first time: Admiral of the Fleet, Royal Standard, and the Admiralty flag.

On the way we carried out gun practice at a gunlayer's target and made good shooting. Queen Alexandra was greatly interested and wished to photograph the targets, so we recovered the canvas and hoisted it up for her snap-shot. Coming in with the target hoisted annoyed some of the carping critics of the Fleet, who accused me of cheap swagger and thus exposing the result of the practice to the eyes of the Fleet. It is extraordinary how many of my most innocent deeds have been the subject of critical remarks of an uncomplimentary character.

Whilst off Cowes His Majesty conferred on me the

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C.V.O., and what I appreciated even more, sent one of his entourage on board the *Dreadnought* to deliver to me a very gracious and appreciative message.

I left the *Dreadnought* in the early autumn of 1906 and went to the Admiralty as Director of Naval Ordnance. I had no desire to exchange the duties of the two appointments, and I should never have done so had the exchange not been astutely engineered by Sir John Fisher.

On a certain Sunday Admiral Bridgeman received a telegram from the Admiralty informing him that Sir John Fisher wished to see him at 10 a.m. the next day. This necessitated his leaving for London on the Sunday. Early on Monday morning I received a telegram ordering me to attend the Admiralty at noon on the same day. On arrival at the Admiralty Sir John told Admiral Bridgeman that he proposed to offer me the post of Director of Naval Ordnance. The Admiral had no desire to change his Chief-of-Staff; but, when Sir John pointed out the importance of the post, he said that if I wished to go he would, of course, not stand in my way. Sir John, on some excuse, then sent him back by the next train to Portsmouth. When I arrived Sir John offered me the appointment and told me that Admiral Bridgeman had no objection to my leaving. This rather annoyed me and I said of course if Admiral Bridgeman was willing that I should leave I would accept the appointment. On arriving on board the Admiral asked me if I had accepted. I said: "Yes, as Sir John told me that you were quite willing that I should."

Admiral Bridgeman then said that he had not put it that way, but that he had no desire for me to leave, on the contrary he had every wish that I should stay. All that he intended, was not to stand in my way. I replied that had I known this I should have refused.

The incident is a good example of Fisher's foresight. He knew quite well that if, after I had received the offer, Bridgeman and I had met, we would have put our heads together and I would have refused the offer of the new appointment. So he arranged times so that the Admiral had left London before I arrived, and thus his scheme succeeded. Jellicoe moved up to the post of Controller and I became Director of Naval Ordnance.

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The more I became acquainted with Sir Francis Bridgeman the faster friends we became. I had first met him when he was Captain of the *Camperdown* and I was Torpedo Lieutenant. He was then looked on as rather a hard man and a strict disciplinarian, but he was an excellent captain of a ship. He and Admiral Sir Michael Culme-Seymour suited one another exactly. The Admiral was a fine seaman and a perfect gentleman. He handled the Fleet, such as it was, magnificently, and had a first-class 'eye' for manœuvres. He was full of energy but was apt at times to fly off at a tangent. Bridgeman, or as he then was named Bridgeman-Simpson, was an excellent sedative. I have seen the Admiral's superabundant energy at 6.30 a.m. cooled completely down merely by Bridgeman's silence. He could also say things to the Admiral which no one else could.

I remember once when I was dining with the Admiral the latter said that he did not think the gunnery had improved since he was a midshipman. Bridgeman merely replied: "You have no right to make such a statement." "Oh, come, Bridgeman," said Sir Michael, "surely I can say what I like." "No, you can't," replied Bridgeman. "You as an Admiral have no right to make any statement that is not strictly correct." Sir Michael blustered, but Bridgeman's frigidity cooled him down.

The next time I came across him was when he hoisted his flag in the *Irresistible*. He stayed with us all too short a time, but I learned to admire him greatly.

After the *Dreadnought* I met him at the Admiralty, but I had little to do with him there. Unfortunately he was too old to have an active command during the War.

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Chapter IX

DIRECTOR OF NAVAL ORDNANCE

I TOOK UP THE DUTIES OF DIRECTOR OF NAVAL ORDNANCE—called for short D.N.O.—in September 1908, in succession to Rear-Admiral Sir John Jellicoe, and held it until November 1911. It was a time of very hard work not only for me but also for my assistants. The department had two main branches—the gunnery portion and the torpedo portion. The gunnery division dealt with all the gunnery material, guns, mountings, ammunition, stores, and fleet gunnery exercises and the gunnery school. The torpedo division, under a Post Captain (first Captain Bernard Currey and afterwards Captain Stuart Nicholson[1]) dealt with all torpedo matters and exercises. In the gunnery division I had a most excellent assistant D.N.O. in Captain F. C. T. Tudor,[2] who relieved me of the majority of the work in connection with the gunnery exercises and gunnery schools, also there was a very important branch of engineer officers under a most competent Fleet Engineer, E. F. Ellis,[3] who dealt with the design and supply of gun mountings. For this purpose a number of naval engineer officers were employed as Admiralty inspectors at the works of the various contractors.

The more immediate assistants to the D.N.O. were Commanders F. C. Dreyer,[4] Sir Malcolm Macgregor, H. R. Norbury, and H. P. E. T. Williams; Captain E. W. Harding, R.M.A.; and the Secretary, T. G. Anderson, whose encyclopædic knowledge of past decisions in the long life of the department was of the utmost service. The work performed by this small coterie was invaluable to the D.N.O. Yet another department was that of the Superintendent of

[1] Both these officers afterwards became Admirals.
[2] Afterwards Admiral Sir Frederick Tudor, K.C.B.
[3] Afterwards Engineer Rear-Admiral E. F. Ellis, C.B.
[4] Afterwards Admiral Sir Frederic Dreyer, G.B.E., K.C.B.

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Ordnance Stores under Rear-Admiral S. M. Eardley-Wilmot, which dealt with the storage and supply of all ammunition for the Navy. The whole of the D.N.O.'s staff was none too large to deal with the work on hand. The time was one of rapid expansion of the Navy; for not only were the new dreadnought fleet, the new cruisers, and destroyers in progress of construction, but long-range firing had brought with it special problems to be solved, and special apparatus to be invented and tried out. In fact, gunnery methods were very much in the melting-pot: battle practice firing was commencing at towed targets, and range-finders competent to deal with modern expectation of battle ranges were being installed. Experimental firings to prove methods and material took place against the *Colossus*, *Edinburgh*, and *Hero*. The new director firing had been devised, and the necessary instruments had to be designed and supplied. Everything, more or less, was being changed, and electrical mountings for the medium-size guns were being introduced. In fact, my three years of service were full of interest, variety, and, as I shall show, also of anxiety.

The first trouble I met immediately after taking up office was the failure in accuracy of the guns that were being manufactured for the *St. Vincent*, the latest type of battleship of the dreadnought class. When under proof the first gun split its muzzle. This was not a matter of very great importance except that it necessitated delay in the completion of the armament for the ship while the necessary alteration in design was being carried out. But what was in reality serious was that on its trials the gun proved to be inaccurate in its shooting. It was a long 50-calibre 12-inch gun designed to give a high muzzle velocity. To obtain this a heavy charge of cordite had to be used; this did not always become fully combusted (as distinct from ignited) before the projectile left the muzzle; and as the degree of combustion varied from round to round the performance of the gun was irregular.

This caused me to consider seriously whether we were on the right tack in forcing up muzzle velocity, and I came to the conclusion that it would be better to keep this down, and, instead, to put up the weight of the projectile. I need

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not enter into the argument fully here. I will merely point out that the place where the velocity of the shell really matters is not at the muzzle of the gun, but when it strikes the armour of the enemy's ship. Its velocity at this place depends on two things, its initial or muzzle velocity, and the velocity lost in passing through the air to the target. Roughly speaking, with shell of the same shape, the greater the weight of a shell the less is the velocity that it loses on its route to the target. Therefore, with a heavy shell, I could afford to start with less initial velocity, lose less in passing through the air, and yet end up with the same, or even a greater velocity, than that which would remain in a lighter shell, although the latter had been started with a higher velocity.

This pointed to adopting a larger calibre gun and a less high muzzle velocity. I chose a 13.5-inch calibre. The initial velocity I fixed on was the one which would give a 13.5-inch shell the same velocity as that which a 12-inch shell fired from the *Dreadnought* would have retained after traversing 10,000 yards.

I need not enter into the question of armour piercing; suffice it to say that at battle ranges then considered probable, the 13.5-inch shell would have practically the same armour-piercing qualities as that of the lighter shell. It would carry a heavier bursting-charge of high explosive, and the gun would be far more accurate. The question was controversial; but, as I had the backing given by the favourable opinion of Commander Dreyer, for whose views on all gunnery matters I had the greatest regard, I put the proposal before Sir John Fisher.

The proposal appealed to him as an old gunnery officer; especially was he pleased with the idea of the heavier blow, and the heavier bursting-charge. One story I told him put the matter in a nutshell and therefore delighted him. It was one he afterwards was fond of quoting. An old Admiral when giving fatherly advice to a youngster just entering the Navy said:

"Boy! If after-dinner conversation gets heated over politics or Service matters and a man throws a glass of wine in your face; don't throw wine back at him, throw the decanter stopper."

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There is a lot of sense in this. When you hit: hit your hardest.

But to return to the explosive shell. Please note that there are objections to the term 'bursting-charge,' which dates back to the old days when the charge of black powder just burst the cast-iron mortar shell. The explosive in a modern shell does a lot more than this, but no term has yet been invented to express its destructive action. Although Sir John agreed, the battle was by no means over. The Cabinet were alarmed at the progress that was being made in naval armaments; the term 'race in armaments' had been coined, and the adoption of a gun of heavier calibre than that already existing was not favoured by the politicians.

However, I was able to point out that the adoption of the heavier gun and its ammunition would only add some 350 tons weight to the tonnage of a ship. This helped to reassure the waverers and the gun was adopted for future ships. I did not, at the time, appreciate that the 350 tons increase in armament weight would mean, approximately, over 1000 tons in weight to the ship; for, in order to float the extra 350 tons, the hull would have to be increased in length; and the increase in length of hull again meant more horse-power to obtain the same speed; moreover, the armoured deck and side armour would also have to be lengthened, so that a considerably larger displacement than that merely due to the weight of armament would become necessary.

This is a good example of 'the house that Jack built' sort of progression in weights that an addition, not itself of great magnitude, may demand. The gun, I am glad to say, turned out an excellent and most accurate weapon, as did its successor, the 15-inch.

After approval had been given to the principle of the adoption of the gun, I had to settle on the firm that should design and manufacture the first supply. I therefore consulted Admiral Randolph Foote, the Chairman of the Ordnance Committee. He advised that Messrs. Vickers should be selected, since they had previously submitted a design of 13.5 inch 50-calibre gun to the committee. I therefore entrusted the matter to that firm. Shortly after this had been done I received an indignant complaint from

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another firm that they had not been consulted; and they almost immediately sent a deputation of their directors to interview the First Lord of the Admiralty. The interview was not a great success from their point of view. The chairman was well advanced in years, and so also were the remainder of the deputation. Two were very deaf, and the eyes of one were so feeble that he was unable to sit facing the light. I have often speculated on what must have been the feelings of Mr. Reginald McKenna, young, active, and alert, while listening to the complaints of this venerable deputation. For them it must have been a bad advertisement; since the First Lord was bound to have had his attention drawn to the fact that the business of a firm which should be in the van of improvement, design, and invention, was being managed by men who were so advanced in years. The mental note I made was that when sending deputations one should avoid choosing old fossils.

Long battle ranges brought with them a variety of problems, chiefly owing to the movement of the ship which was being fired at while the projectile was in flight through the air. Several schemes to allow for this movement were proposed, among which was one by Mr. A. H. Pollen. It was similar to one used in our shore forts. The system had benefited by the skilled mechanical assistance of the engineers of the Linotype Company, and had been, in its initial stages, largely helped financially by the Admiralty. The apparatus was thoroughly tried out by Admiral Sir Arthur Wilson, but was rejected. This was a great disappointment to the inventor, who remained a believer in his apparatus.

Looking ahead I felt convinced that the 18-inch Whitehead torpedo would inevitably have to be replaced with one of the larger size. Underwater protection had been installed in capital ships, and it was up to the torpedo to attack and penetrate such devices. The old history of gun-power versus armour was bound to be repeated below water. I therefore called a meeting, at the Admiralty, of representatives of Woolwich Arsenal, the *Vernon* and the Whitehead torpedo works at Weymouth. I found that all were against an increase in the size of the torpedo. The manufacturers did not wish to make new jigs, and instal larger machinery, while the *Vernon*, not appreciating that destroyers were

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increasing greatly in tonnage, objected that a larger torpedo would be too unwieldy for use in destroyers. Neither of these objections appealed to me. Other nations would be certain to introduce a larger torpedo, and it was up to us to maintain a supremacy in these weapons as well as in guns. So, since the designers could advance no valid objections to a 21-inch torpedo, I called on them for designs, and the 21-inch torpedo came into being. If we had not done this I am convinced that Germany would most certainly have forged ahead of us in the torpedo line.

I regret that my attention was never attracted to the design of our mines. Trials had been carried out some years before, a certain type of mine had been pronounced to be satisfactory, and this sealed pattern was being manufactured in numbers. There was no whisper from the torpedo schools that it was not in every way efficient. But, on the outbreak of war, it was discovered that, although it was to some extent effective against ships, it did not function properly against submarines, and ultimately the manufacture of mines of the more efficient German pattern had to be undertaken. This was the one great blot in our armament design.[1]

Before the Crimean War all Naval Ordnance and Ordnance stores had been supplied to the Navy by the Ordnance Department: a department separate from the War Office, under an official styled 'The Master-General of Ordnance.' It has been stated that this department was the only one that never failed the Navy in times of war. After the Crimean War the department was merged into the War Office. In 1858 the Admiralty became alarmed at the prospect of what might happen in war-time; for, should both Navy and Army require ordnance at the same time, it was only reasonable to expect that the Army would be served first and the Navy left out in the cold. It was not until 1886 that an inter-departmental committee recommended that the custody of naval war stores should revert to the Admiralty. Fortunately Sir John Fisher, then a Post Captain, was at that time D.N.O. He immediately took up the matter and obtained Treasury sanction for the necessary

[1] In the early days of the War the only really satisfactory mines we possessed were a consignment acquired from the Russian Navy.

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money to carry out this proposal. The change, however, was bound to take time, and it was not until three years later that the complete change-over was effected and the Navy also became responsible for the design of its own guns and material. A good deal, however, remained to be done; and it was not until Sir John Jellicoe became D.N.O. that equal representation between the Navy and Army on the Ordnance Committee was approved, and the creation of a Naval Inspection Corps, to examine, pass, or condemn naval ordnance stores, came into being. It remained for me to place the coping stone on the scheme that it had taken twenty-four years to evolve, by arranging with the War Office for the Admiralty to take over its own ordnance contracts. I was thoroughly convinced that the old system, whereby the Army issued tenders and ordered the stores for the Navy, would inevitably break down in war-time, so I concentrated on the Navy obtaining complete control of their own supplies. When I took to the First Sea Lord, Sir John Fisher, the draft of a letter that I proposed to send to the War Office, which pointed out the difficulties of the existing practice, and which ended by saying that the Admiralty would no longer consent to the responsibility of supplies of ordnance stores to the Navy in war-time being left to another department, Sir John was pessimistic, and from previous experience foresaw a fight. But this was not so. The War Office acted in a broadminded manner, saw the necessity for the change, and at once agreed. For this action Major-General Charles Hadden was largely responsible, and to him should be awarded the credit. Of course I could never have raised the question had it not been for Captain Jellicoe's previous foresight in initiating the Naval Inspection Department.

One other reform that I was able to initiate, and was successful in carrying through, was the appointment of a steel expert as a member of the Ordnance Committee. Up to that time the membership of that committee was as sacrosanct as that of the Royal Yacht Squadron, and my innovation was stoutly opposed. However, I was determined to have, at all events, one member of that committee who had a scientific knowledge of metals, which, after all, were the basic materials used in the manufacture of all

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articles, except explosives and propellants, with which they had to deal.

The Ordnance Committee did excellent work, but they were too slow in arriving at conclusions. Further, they had no financial responsibilities and this was a great drawback. I will explain by giving a concrete example.

Cordite had been introduced as a propellant in the late years of the nineteenth century, and at the time appeared to fulfil its function excellently and to be reliable. Early in 1907, or thereabouts, evidence came to light which showed that cordite, after a certain age, had a tendency to decompose, liberate acid, and then to be liable to ignite spontaneously. If this ignition took place in the metal cases in which the charges were stored, explosions would occur; these in turn might blow open adjoining cases, and the magazine would probably blow up. It was further proved that the temperature at which the cordite had been stored was as important a factor as its age, so far as its safe keeping was concerned. Here was a pretty kettle of fish! Cordite of all ages had been issued to the ships of the Fleet, and no reliable record had been kept of the dates when individual batches had been manufactured, nor in which ships, nor on what stations, they had passed the various years of their life. It was therefore possible that any of our large magazines, or ships of war, might have in their metal cordite cases cordite which was on the point of ignition. The active steps that were taken fortunately prevented serious accidents taking place, at least none that can be definitely traced to the above cause. The matter may therefore seem to have been of small moment, but at the time it was of the utmost importance. The D.N.O. was literally sitting on a powder magazine; he never, from one day to the next, felt sure that a disaster of the first magnitude might not occur. Premature explosions occurred in the cruiser *Fox* and a battleship, I think the *Revenge*. In order to minimize the chance of accidents as far as possible, all cordite other than that of recent manufacture was tested. These tests showed that a considerable quantity was in bad condition; but there always remained a doubt as to whether there were not other charges that had escaped observation. The reports on the examination of cordite came to me, and also to the Ordnance Committee; and, on their reports, my

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assistants and I determined the action to be taken, whether certain batches were to be destroyed, kept for gunnery exercises or given a clean bill of health. Money, I might remark, at the time was very tight; so my feelings can well be imagined when one morning I received a report from the Ordnance Committee saying that in their opinion certain lots of cordite, amounting in value to some £200,000, should be destroyed. From the reports of examination of the cordite I had no doubt that a considerable quantity, nearly three-quarters in fact of that recommended for destruction, was perfectly safe for several years to come. The Ordnance Committee had no financial responsibility, so it was a simple matter for them to say 'destroy the lot,' and with that proposal their responsibility ended, and they could adjourn for lunch. On the other hand, I was landed in an awkward predicament. Either I had to accept the report of the committee and destroy what I considered to be quite serviceable stuff and provide new, which would seriously hamper my stores vote, and delay the fitting out of new ships while the reserve cordite was being replaced; or I must take the responsibility of ignoring the opinion of the committee. If I did so, and there had been a fortuitous accident on board a ship carrying any of the cordite under dispute, whether due to this cordite or to the other batches (which of the two could never have been subsequently determined), I naturally would receive all the blame, and the odium for the loss of a ship and the ship's company.

I took the risk and refused to follow the recommendation of the Ordnance Committee; but the episode gave me a holy dislike of recommendations emanating from committees or people who were freed from the financial responsibility which attached to the carrying out of their proposals.

It seemed to me that in order to mitigate the danger from premature ignition of cordite, the best course to pursue would be to try to arrange that the ignition of a single charge in a magazine should be rendered innocuous to the other charges. In furtherance of this principle we carried out an experiment in the old battleship *Colossus*. I was convinced that the real danger lay in the pressure of gas becoming great enough, not only to burst the metal cordite case, but to damage surrounding cases and cause the cordite in them

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to ignite. It was, of course, common knowledge that cordite when ignited in the open air would burn freely, and at a moderately slow rate. If, however, the cordite was confined, the gas would, on ignition, be continually increasing in pressure, due to the strength of the container; this would cause the burning to be increased at a rapid rate until the container burst with a violent explosion. Everything therefore pointed to the desirability of having weak cases and allowing the cordite to burn freely without generating pressure. I therefore had the magazine door of the *Colossus* fitted with a flap which would lift under a slight pressure and allow the gases free exit. Also the lids of the cordite cases were weakened so as to open to inside pressure. I had originally intended to ignite three charges at this trial on board the *Colossus*; but, when thinking over matters the night before the trial, I came to the conclusion that it would be wiser to use a single charge only, and pack other cases, filled with dummy charges, around it. I am glad I did so; for, when the single charge—one for a 12-inch gun—was ignited, the flame from the cordite found its way up three hatchways, through three decks, and came through a coaling shoot-hole in the upper deck, near where I was standing, and up six feet above my head. Had I used three charges I should probably have been cremated. It was indeed a revelation to see the enormous amount of gas which was generated by the ignition of a single charge of cordite for our heavy guns.

If we reverse the effect, and imagine such a charge igniting in the turret of a dreadnought battleship or cruiser, a somewhat similar effect will be produced and the flame will find its way below into the magazine flat as well as escaping from the rather constricted exits of the turret. At the time of which I am writing, however, we felt secure from accidents resulting from such a cause, as flash-plates were fitted in all apertures leading to the magazines. Moreover, we had had the experience of such a premature ignition in a turret when a 12-inch gun was fired with its breech-block unlocked. In action, however, there is not only one single charge exposed, and therefore liable to be ignited, but other charges are on the way up from the magazines, and these may also catch fire. It is not easy to foresee the exact conditions prevalent in an action, but at

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the same time I cannot help wondering if a little greater foresight on my part would not have led my following up more closely the question of safety to magazines in action, and so perhaps have forestalled the accident to at least one of our battle cruisers at the battle of Jutland.

I must needs mention our relations with Woolwich Arsenal, which were most cordial. For political reasons a portion of our annual orders for guns was given to the Arsenal. It was also hoped that the costing accounts kept at that place would provide figures by which to check the prices of the armament firms. This was far from being the case, the cost of manufacture at Woolwich almost invariably exceeding that of private firms. The chief reason, apart from wages, which ruled higher near London than further north, was that the establishment was far too large and costly. The Arsenal had been laid out and equipped with a view, not only of present manufacturing needs, but as a factory in time of war. To this end a considerable amount of reserve machinery had been laid down and buildings provided. Needless to say that, with the rapid change through which armaments were passing, a good deal of the special reserve plant was hopelessly out of date; but, since it figured on the books, the cost of depreciation and upkeep had to be charged in the accounts. Naturally, any sensible accounting would have arranged for the two requirements, that of current manufacture, and the reserve portion, to be separately charged. Not so Woolwich. Overhead charges were totalled up and debited to current manufacture. Not only did this destroy the value of the accounts for checking purposes, but the paper manufacturing costs were raised and these the Admiralty had to pay. I say paper costs, for paper costs they were so far as the country was concerned. It was the case of robbing the Admiralty to pay for the reserve machinery for the Army.

After the War I sat on a committee which was appointed with a view to arranging some method whereby Woolwich Arsenal could be made to pay its way when the anticipated shrinkage of armaments orders took place. It was a hopeless task. The position and lay-out of the Arsenal were against economy. Moreover, it is practically impossible for a Government factory to take up commercial business. The

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difficulties inherent in a Government-financed factory competing with private business firms, and the ill-will that would have been created, precluded any such commercial development.

During 1908 aeroplanes commenced to show signs of being of importance in war-time. I attended, on behalf of the Admiralty, at the first international aeroplane race held at Rheims. When I arrived on the course, the day before the race, I found the Frenchmen embracing one another in a state of great excitement, as there were three aeroplanes in the air at the same time. Such an array had never before been seen. A Curtiss biplane carried off the prize. In fact, it was the one, if I remember rightly, to complete the course, which certainly was not more than a few miles in length.

When the Air Consultative Committee was created under the chairmanship of Lord Rayleigh, I became a member. Among the other members were Dr. R. T. Glazebrook, F.R.S., Mr. F. Lanchester, F.R.S., Professor J. E. Petavel, F.R.S., Dr. W. N. Shaw, F.R.S., Major-General Sir Charles F. Hadden, K.C.B., Mr. W. Mallock, F.R.S., Sir Alfred Greenhill, F.R.S., and Mr. F. J. Selby as Secretary.

At that time I was convinced that we should build and experiment with rigid airships. My argument was that England and Scotland were extraordinarily well placed for working airships as scouts over the North Sea. The very large base-line, which extended from John o' Groats to the North Foreland, should enable an airship to work from either the north of Scotland or the south of England, without ever encountering a head wind. There was, of course, no comparison between the efficiency of scouting as carried out from an aeroplane and an airship, for in the latter far greater conveniences could be installed. Moreover, at that time aeroplanes were in their infancy and most unreliable.

Through the backing of Mr. McKenna, Treasury approval was given for the construction of an airship. Messrs. Vickers, through their very go-ahead representative, Lieut. Sir Trevor Dawson,[1] undertook the work and provided a large hangar at Barrow-in-Furness. A separate

[1] He was knighted in 1909 and became a baronet in 1920.

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drawing-office was allotted to the designers, and I was largely responsible for the design.

I had for some months been studying the design of rigid airships from such information as I could obtain about the German Zeppelins. In fact, the double work of the D.N.O., and my incursion into airships, brought about a temporary breakdown, and for three weeks I had to give up work altogether. However, I soon recovered my usual health.

The outstanding difficulty lay in obtaining a suitable aluminium alloy. In those days England was considerably behind Germany in commercial metallurgy. Duralumin was the only metal available for the skeleton of the airship.

One of the drawbacks to an experiment of this nature is that it must be carried out on a large scale. It is therefore expensive; further, any first attempt must be looked on largely as an experiment from which to gain experience for future manufacture. Every detail was a new venture; the rigid portion, the gas-bags, the envelope, and the hangars. It would have been beyond ordinary luck if the first attempt had proved satisfactory in all these details.

The chief difficulty, as had been the case with the small submarines, was to keep down the weight of the structure, engines and equipment. When puzzling over the method of anchoring the airship I hit on the scheme of using a mooring mast. I was led to do this by the analogy of a ship floating on the water and being attached to a buoy. Naturally, the ring of the buoy had to be lifted so as to be in line with the nose of the airship. The only way this could be done was by having a rigid vertical support long enough to reach from the ground up to the point of suspension. The most satisfactory form of hangar would have been one floating on the water, which could be turned so as to lie in the same direction as the wind—like the one used by the German Zeppelins. The airship then would have been able always to enter the shed head to wind. The limited area of the dock, however, rendered this form of hangar impossible without the whole space of the basin being taken up; moreover, the cost of the floats on which it would have been erected would have been prohibitive.

Another advantage of the mast was that I hoped to be

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able to carry out the engine trials with the ship moored to it. These could be undertaken by 'steaming' against a suitable wind, say 40 m.p.h., and fortunately Barrow not infrequently kindly afforded a succession of such gales. In this way valuable information could have been gained before the ship was allowed to navigate freely.

Unfortunately I had left the Navy before the ship was completed. Subsequently I visited her once at Barrow and was sorry to see that a good deal of extra weight had been added, one serious item being the insulation of the tension wires where they crossed each other. This had been done with a view to eliminating sparking from a static charge of electricity. Personally, I did not fear statical electricity such as lightning, except at the moment of mooring, when the ship might suddenly be highly charged from the earth and a rapid discharge caused to an adjacent cloud. The actual portions of the metal frame and wires were all in electrical communication with each other, and therefore practically at the same potential.

Of the subsequent events I know nothing, except that in manœuvring the airship into her shed stresses were caused on certain portions of the structure and the ship broke up. Damage to a single member was certain to cause damage to the whole. I do not know the exact cause of the mishap, and I blame no one. I have little doubt that the same thing would have happened had I been in charge.

But, to my mind, the serious part of the business was that the Admiralty ran away from the problem. Surely the moment of failure was the time to continue the experiments? But other counsels prevailed, and a very useful scouting adjunct was denied to the Grand Fleet, whereas the High Sea Fleet had the benefit of their Zeppelins.

There is this much to say, namely, that the North Sea was not an ideal place for air reconnaissance owing to the prevalence of mist. But then, mist is not always present in northern waters; and, in fine weather, airships would have been of great value to Sir John Jellicoe.

It was while the airship was under construction that I made a passage in a balloon piloted by Charles Rolls. I wished to see what air navigation felt like, and as aeroplanes were practically non-existent, the only means of

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journeying in the air was by balloon. We left Shorts' balloon works at Battersea, in South London, in thick weather, and rose quickly till we lost sight of the earth and continued seeing nothing for an hour. Then our pilot thought it was time to check our position ; so we let out gas and descended, and when we saw houses below, checked our descent by dribbling out sand ballast. It was too foggy to ascertain our position. So on we drifted until it was estimated that we were approaching the Bristol Channel, some four hours after the start. Rolls then decided to make a landing. We were cautioned to hold tight to the car, as otherwise we might be thrown out as it touched earth and break our arms and legs. Gradually we descended, and when about thirty feet above the ground let go an anchor, which careered madly across a ploughed field, but at last caught up in a hedge. What a mess there would have been if we had hooked a team of horses ploughing ! Anyhow, when we hooked the hedge the car, of course, shot over on its side. It was lucky we had had the warning to hold on tight, or we would certainly have somersaulted out on to the ground. Then Rolls operated the ripping panel, let out all the gas and the car gently righted itself. After that we packed up the balloon and returned to London. We found that we had landed not near Bristol, but on the Oxfordshire hills ! It seemed to me, from this experience, that ballooning was what the Yorkshireman would call a ' moog's ' game. It was just about as sensible as climbing on to the box of a four-in-hand coach, throwing the reins on to the horses' backs and then whipping them up, trusting to the brake to save a smash.

In April 1909 Lord Charles Beresford hauled down his flag and at once set to work to further his campaign against Sir John Fisher. One of his brothers had died shortly before and left him money, which was extremely useful in enabling him to keep open house in Grosvenor Street—an aid to propaganda on which it is unnecessary to enlarge.

One amusing incident happened at the time. It was retailed to me by Sir John, and, needless to say, cost nothing in the relay ; for he was an excellent *raconteur* and was gifted with a wondrous wit and style of putting things. It therefore loses much when consigned to print.

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It appeared that Admiral Bridgeman, who had just joined the Board, as a matter of courtesy called on Lord Charles, who had been his old Chief in the Mediterranean. He chose the forenoon, as that time was more likely to be one when Lord Charles would be at home. He was duly ushered into the library by the butler, where he found collected round the table Lord Charles' shadow Board of Admiralty, who were obviously plotting the downfall of the authorized and official Board installed at Whitehall. A terrier in a hen-roost could not have created greater consternation. Admiral Blank rose at once and turned his back to poke the fire; Admiral Dash dropped a book on the ground and went down on all fours to find it; Admiral Double Dash found great interest in looking at the view from the window; Captain Double Dot buried his face in his papers with a unique absorption, and Lord Charles rose and bundled Bridgeman out into another room. The butler had evidently thought Bridgeman was a new mutineer recruit!

Shortly after retiring, Lord Charles wrote a letter to the Prime Minister, Mr. Asquith, in which he indicted Sir John and all his works. Of this the Prime Minister had to take serious notice; he therefore appointed a committee of the Cabinet to investigate the charge. With this I had no direct connection except that Sir John wished me to attend the meetings and assist in providing him with ammunition. I begged off, as I was already snowed under with work, and could not see how I could have been of any real assistance. Fortunately Mr. McKenna conducted the case on behalf of the Admiralty, and Sir John was constrained more or less to keep silence, otherwise his impetuosity would have helped Lord Charles rather than the Admiralty.

Towards the end of the inquiry Lord Charles gave his case away by trying to turn the investigation of his complaints into a fishing inquiry. One morning he produced a copy of a letter from a Commander-in-Chief on a distant station which had been written to the Admiralty complaining of his shortage in ships. This could only have been obtained from the Admiralty; and, on inquiry, it was conclusively proved, to the satisfaction of the committee, that two officers at the Admiralty had been supplying Lord Charles with secret information. Such a breach of all official rules

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was too much for the committee to condone, and the inquiry ended in Sir John's favour. But for political reasons a shadow of censure on him was inserted in the findings—a reflection that he deeply resented.

One of the two officers implicated died prematurely a year or two later: the other lived and, a good many years afterwards, died in the odour of sanctity.

The words 'odour of sanctity' remind me of a clever distich which appeared many years ago, if my memory serves me, in the *World*, then the leading society paper. The church of All Saints, Margaret Street, was the favourite place of worship of the Princess of Wales, afterwards Queen Alexandra. Of course, it also became the fashionable resort of society ladies.

> 'In a church which is garnished with mullion and gable,
> Altar and reredos, gargoyle and groin,
> Where the dress of the penitent's sealskin and sable
> And the odour of sanctity eau de cologne.
>
> But surely if Satan, flying from Hades,
> Had chanced to alight mid the powders and paints,
> He'd have said, as he looked at the dress of the ladies,
> Oh! where is all sinners if this is all saints?'

During the time that my predecessor was D.N.O. the Coventry Ordnance Works came into being. It was an armament business owned by three large shipbuilding firms, John Brown & Co. of Sheffield, Cammell Laird of Birkenhead, and the Fairfield Shipbuilding Company of Glasgow. These firms competed with Messrs. Armstrong, Whitworth & Co. and Messrs. Vickers for foreign men-of-war. At that time Turkey, Greece, and South America were unable to build their own ships. Japan was gradually equipping her building yards. Spain and Portugal could be looked to for spasmodic orders, but the South American republics generally had some annual orders to place in England.

The three parent firms found that they were being ousted from the market owing to the fact that a foreign country generally stipulated for a battleship, cruiser, or destroyer to be delivered to them complete with guns, ammunition, and stores. These they had to purchase from either Vickers or Armstrong, which two firms, being their most formidable competitors, did not fail to charge good prices, and were

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not always able to comply with the delivery dates required by the parent firms.

It was a case of either going out of the market altogether or of setting up an armament factory of their own.

If such a factory was to be a paying concern it was obligatory that it should be given some portion of our War Office and Admiralty orders. These two departments were therefore asked if they would support the new venture. As a matter of fact, at that time both departments were anxious to find some check on contractors' prices. Woolwich had failed in this respect, and here was a chance. They therefore both agreed to give Coventry Ordnance an indefinite amount of work annually, provided that that firm kept outside an armament ring, and did not enter into any arrangement with Armstrong or Vickers as regards price. In spite of the promise being indefinite Coventry Ordnance was started, and a very capable Managing Director, Mr. H. H. Mulliner, was installed.

When I became D.N.O. I fully appreciated the value of a checking firm, and did my best to keep Coventry supplied with work, rather crumbs I fear, but that could not be helped under the conditions then obtaining. The plum of armament orders in those days was one for turret gun mountings for the dreadnought battleships and cruisers. They were, and still are, an aggregation of complicated hydraulic machinery, to manufacture which special designers, machines, and experience are required. It was therefore rather a risky experiment to give such an order to a young firm. However, when the contracts for the set of turrets for the 1909 programme came along, Mr. Mulliner was informed that one set would be allotted to his firm.

Now, an unfortunate thing occurred.

The Admiralty, for some particular reason, decided to build a cruiser with 9·2-inch guns mounted in turrets. The Controller suggested that it would be a good thing for Coventry to cut their teeth on these smaller mountings; and I, perforce, agreed, and informed Mr. Mulliner. He was, of course, a bit disappointed, but saw the reasonableness of the argument. Then a little time afterwards the Board recovered from their temporary relapse, and cancelled the 9·2-inch gun cruiser; but, in the meantime, the orders

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for the battleship turrets had all been allotted ; so Coventry had fallen between the stools of the two orders. I had to inform Mr. Mulliner of the alteration in Admiralty plans ; and, needless to say, he was both disappointed and annoyed, and considered that the Admiralty had been guilty of a breach of faith.

What has been called the Mulliner case has been the subject of much misquotation. What really happened was this :

In 1906 Mr. Mulliner made a communication *re* the productive power of Germany, which was communicated to the Admiralty, and proved on investigation to be approximately correct. No action was taken by the Admiralty on Mr. Mulliner's statement. In 1908 Lord Tweedmouth retired from the Admiralty and was succeeded by Mr. McKenna.

At the close of the year 1908 Mr. McKenna presented his shipbuilding proposals to the Cabinet. The original proposal was for a three-year programme of six new capital ships each year, which would give the Navy eighteen new capital ships in 1914. There was much controversy in the Cabinet over Mr. McKenna's proposals, a controversy which was allowed to be carried on in the Press.

At this stage Mr. Mulliner once more appeared upon the scene. As I have pointed out, he was very sore that his firm had not received orders for the turrets of a cruiser or battleship. He publicly claimed to have rendered great public service in acquainting the Admiralty with the German development of productive power. Members of the Opposition in the House of Commons took up Mr. Mulliner's case and clamoured for more ships to meet the alarming situation. The Admiralty naturally disapproved of Mr. Mulliner's very ill-advised action, and refused to give any orders to his firm while he was their accredited representative.

Thus the Admiralty programme, which was presented to the Cabinet at Christmas 1908, of eighteen ships over three years was formulated without any knowledge of Mr. Mulliner or his statements. In fact, until Mr. Mulliner entered the lists Mr. McKenna had neither seen nor heard of him.

This programme was accepted by the Cabinet (though in a different form, namely 8, 5, 5, instead of 6, 6, 6) and was eventually nɔəxəted in full, and the eighteen capital

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ships, no more and no less, were in commission when the War broke out in 1914. Mr. Mulliner's activities did not, in any way, influence the Admiralty; they were also disapproved of by the firm which employed him and led to his dismissal.

As D.N.O. I was sorry, as he was an able and pushing man, and I feared that the Coventry works might experience difficulty in finding another equally good Managing Director; but the matter was one for the Board of Admiralty and not the more humble D.N.O.

With regard to the four extra ships mentioned above, Sir John Fisher wrote to Mr. Churchill an amusing letter, ending:

> 'I think it would be quite lovely to call the four extra dreadnoughts:
>
> No. 1. Winston,
> No. 2. Churchill,
> No. 3. Lloyd,
> No. 4. George.
>
> How they would fight! uncircumventible. Read this out to the Cabinet.'

One incident which occurred during my time as D.N.O. amuses me still when I chance to remember it. Certain retired naval officers, and some more or less prominent personages, formed themselves into a society to seek out and discuss the needs of the Navy. They dined periodically, and after dinner their principal guest addressed them on proposed reforms, or suchlike matters. They asked me to dine and talk to them about the 'needs of the Navy.' Now it should have been more or less obvious to them that I, as an Admiralty official, could not divulge anything of interest or which was in any way confidential. I accepted, and at dinner sat between Sir Vincent Caillard and Colonel Repington, who afterwards for a month or two electrified the country by publishing a diary of his war-time experiences in London which most of us considered that it would have been far better not to have made public. However, when I was called upon to speak, I explained that, in my opinion, the chief need of the Navy was for retired officers and others whose knowledge could be neither accurate nor

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extensive, to leave the Navy and naval matters to the Admiralty, and to back up the Admiralty rather than to oppose their policies. I took half an hour to press this home, giving reasons for my statements. I escaped with my life, which was more than I had a right to expect.

Another memory of after-dinner speaking was when I returned thanks for the Navy at the Cutlers' Feast at Sheffield in, I think, 1909. Sir William White, the eminent naval architect, had lately been belabouring the Admiralty over the *Dreadnought* design, pointing out how, in Old Testament times, the little David had killed the giant Goliath; hence, he argued, small ships and medium-sized guns were preferable to large ones, etc., etc. It was this article that I intended to take as the text for part of my discourse. Imagine my surprise, and the slight difficulty that was facing me, when I found that I was to be seated next to Sir William. However, I rose when called on, and spoke about heavy guns, a matter very near to the heart of all in Sheffield. Then I quoted Sir William's article and said that the gifted author must have forgotten one thing, and that was that 'David was armed with the long-range gun of the period and that a new chapter in Jewish history would have resulted if Goliath of Gath had been armed with slings and pebbles in number and of a calibre suitable to his tonnage.' This was received with much hilarity, but Sir William looked glumly down his nose. However, I am glad to say that my digs did not affect our cordial relations.

About this time the First Lord offered me the position of Controller of the Navy; a post I envied greatly. Once more I was to succeed Sir John Jellicoe. The arrangement was for me to go to sea early in January for some months, and then to return and relieve Sir John.

Naturally I accepted, and I wrote and asked my old shipmate Captain Rudolf Bentinck to come as my Flag Captain. Then, out of the blue, came an offer to me from Mr. Charles Ellis[1] to leave the Navy and go as Managing Director of the Coventry Ordnance Works. I told him that there was practically no chance of my accepting; but at the same time I would not definitely refuse until I had had twenty-four hours to think over my position. No better

[1] Afterwards Sir Charles Ellis, G.B.E.

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envoy could have been sent, for he was a man of transparent honesty and had great personal charm.

I then surveyed what I considered my future would be. I had only been for some nine months at sea in command of a battleship. If I went as Rear-Admiral in one of the battle fleets for, as was then proposed, the rather short time of four months, then returned as Controller for four years, I would have little chance afterwards of obtaining the command of any large battle fleet, but only of obtaining the command of one of the more distant stations, China or Australia. I should never be appointed to command the Home or Mediterranean Fleet. In this opinion I was confirmed by Mr. McKenna. Further, I never believed that Germany would go to war with us. It was perfectly patent that at the outset she must lose her colonies and merchant navy, and, in the end, be beaten; while if she remained quiescent, she would continue, and most probably succeed, in her policy of ousting us commercially from the markets of the world. I was strongly of opinion that the Kaiser must be fully cognizant of these truths, and that his bluster was mere sabre rattling.

So, in the end, I asked permission to retire and accepted the offer made by Mr. Charles Ellis.

Throughout my time as D.N.O. I had been haunted by one shadowy spectre, namely, the vague fear that working hard as we were, trying all things and striving after perfection: yet, when the day of trial in war came, we might find that the enemy had succeeded a little better than we had done. There might have been some idea, some invention, some improvement, that they had tumbled to and perfected, of which we had failed to think, and in which we might be found to be their inferior. I think that the War showed that it was in the pattern of mine only that the enemy had an important advantage over us. In all other matters we were fully their equal. At the time I left the Admiralty the armour-piercing qualities of shell were under investigation and trial; and although the Germans in the War, some few years later, were superior to us in this munition, such advantage was undoubtedly due to their superior technique in steel manufacture, rather than to any lack of foresight on the part of my successor.

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Chapter X

COVENTRY ORDNANCE WORKS

BEFORE DEALING WITH MY TIME AS MANAGING DIRECTOR of the Coventry Ordnance Works it will be of advantage to give a short explanation of the organization and management of a manufacturing company. This is especially necessary, since from my own experience, and from letters in the Press and other statements, I find that considerable ignorance exists regarding the finance and organization of a manufacturing business.

The average man in the street appears to be of opinion that manufacture can be speeded up indefinitely and that when, suddenly, the country wants guns or aeroplanes, if they are not forthcoming in an abnormally short time, then someone is to blame. He does not appreciate that time of production is a matter of simple arithmetic.

Every aeroplane, gun or mounting or munition is built up of a number of parts, each of which requires a definite number of hours to be spent in its manufacture. Each has to undergo a number of separate operations, none of which can be speeded up without damage to the material or machines that are being employed.

If a sudden call for armaments is made which is beyond the capacity of the existing shops, then expansion of the works must take place. New shops must be built, new machines installed, and additional workmen taken on.

The reserve of workshop machinery kept by the machine-tool makers is distinctly limited. It does not pay to manufacture and store machines; not only because money is thereby lying idle, but the design and manufacture of machines is always improving; and, generally speaking, the newest machines are those which are in greatest demand. When, therefore, sudden expansion takes place, the requisite workshop machines have to be made.

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It may, therefore, take many months before a new shop is fully equipped and ready to start work. Then comes the difficulty of providing labour. It is extremely difficult to provide *skilled* labour. Successive Governments and engineering strikes have done their best to kill the skilled labour of the country. The Government by fits of economy in armament programmes, which in the end are anything but economical, have, on occasions, upset the labour of the country. These fits have always occasioned a wave of unemployment. Skilled men are thrown out of work in some sixty or seventy different trades. The result is that, in the past, the best workmen have filtered away from the country. The same result has been produced when strikes have occurred. The big engineering strike in the early years of the century drove many of our best men over to America, as they were tired of being monkeyed about by the trade unions that engineered the strike. A good workman, as a rule, would far rather continue in steady work than be ordered out into idleness by his union for a very problematical increase in wages. The T.U.C. is apt to be, on occasions, as dictatorial as any totalitarian dictator.

Again, between 1920 and 1937, the theorists who were in power deliberately, in defiance of past experience, reduced armaments and damaged for years our engineering and other trades; and, incidentally, reduced our authority among the other nations of the world. Young men failed to enter trades in which there was little employment; elder men grew older and gave up work before they otherwise would have done, while the dole poisoned the old traditions that had hitherto been held in the manufacturing trades. So that, when the call came to repair the fatal breaches which had been made in our defences, there was no reserve of skilled labour on which manufacture could lay hands. Who was to blame? The plain answer is, the successive Prime Ministers, Foreign Ministers, and Cabinets that were in power for those fateful seventeen years. Theorists and visionaries persuaded themselves that human nature had suddenly changed its spots, that all the world had suddenly become angelic, and that money could be saved on armament and devoted to social services. Soldiers were even forbidden to wear side arms at the Cenotaph service on Armistice Day.

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Sufficient of this digression ; but perhaps it has not been out of place to point out the happy-go-lucky manner in which our labour and manufacturing ability has been muddled by Cabinet Ministers and a House of Commons elected on Party lines, the majority of whom know nothing of trade or manufacture, nor are they troubled by the vast waste incurred by strikes. This ignorance and apathy should make anyone who has studied the Italian Corporation system, in its latest form, long for a similar reform to be instituted in this country.

In an emergency in this country a manufacturer must make use of makeshift labour and start to train up novices. This means scrap, spoiled work, and delay.

Manufacture of war material and equipment is, and must be, a lengthy task. Thousands of separate operations have to be carried out on a single gun-mounting and these must follow in regular sequence through the machines. Manufacture can only be speeded up by a duplication of shops, machines, and personnel, or to a limited extent by night-work.

I must now say a few words about finance.

The public will not put up money to start a business unless they can see an adequate return for their money. That is plain common sense. There are, broadly speaking, two classes of investments : Loans and business concerns. Loans generally yield fixed rates of interest ; the returns from businesses depend on profit-making. The capital that a person invests in Government loans is usually looked on as safe ; that invested in manufacturing concerns may not be secure, since the company may fall on evil times. For this reason the British Government can offer a lower rate of interest than a private company for any money it may wish to borrow. If the Government is paying 3 per cent interest on its loans, the public expect to get at least 5 per cent from a commercial undertaking, unless that concern is phenomenally strong financially. There is no reason, therefore, to accuse a firm of making undue profits if it pays a 5 or 6 per cent dividend on its ordinary shares when Government loans are paying only 3 per cent. Safety of capital dominates the situation. There have been quite a number of examples in late years of firms of first-class

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importance falling on evil times and having to write down capital. This writing down means wiping out of existence a portion of the money that has been lent to the firm by each investor.

The affairs of a company are managed by the Board of Directors, who settle policy and the finance of the business. Under them are one or more managers who may also be Directors. These deal with the technical work of the firm and are responsible to the Board for the results obtained. Below them again in hierarchal order come managers of departments, draughtsmen, foremen, and charge hands.

There are certain annual charges called overhead charges that must be paid however much or little work is going on in the shops. These include: rent, taxes, rates, debenture interest if any, bank charges, depreciation of plant and buildings, directors' fees, and salaries of the permanent staff, such as the managers, foremen, draughtsmen, charge hands, etc. These have all to be paid even if there is no work at all going through the shops. But, when there is work in progress, then these charges must be paid for by the contract price received for the work on hand.

In order to tender a price for an inquiry, a calculation of the cost is made. The first sum put down is the cost of the material that will be required, then the costing staff work out the number of hours that the work will be passing through the various machines, as well as all other labour charges, such as fitting and erecting, etc.; then is added the cost of the consumable stores, and on top of this come the overhead charges. Then must be added the profit, transport, etc. Speaking generally, the quantity of work lessens the cost of manufacture. We will take a concrete example.

Suppose 10,000 articles are ordered and the overhead charges of the firm amount to £10,000. Then £1 must be added on to the cost of each of the 10,000 articles in order to cover the £10,000 overhead charges. If now the order is increased to 20,000 articles then 10s. only need be added on to the cost of each article in order to clear off the £10,000 overhead charges. The tender price for 20,000 articles can therefore be 10s. less per article than for 10,000 articles. Much the same argument can be applied to 'dumping.' Suppose a country A prevents another country B attacking

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its home market by imposing a high tariff, and suppose B to have no tariff on imported manufactures. Let us imagine that A can manufacture 100,000 articles that cost him £8 each, and which he can sell at £10 in his home market. If he manufactures 200,000 articles he will be able to do so for a lower price for each article than when he made only 100,000 articles. Say that 200,000 cost only £7 each to manufacture. He can then, as before, sell 100,000 in his own country at £10 each, and as these have cost £1 each less to manufacture he will make £1 additional profit on each. That is, he will net £100,000 more than he did before. He does not care much about the other 100,000 of the 200,000 articles provided he can sell them at not less than cost price. So he dumps them into B's country at £7 each and utterly ruins B's home market.

The inhabitants of B country of course buy A's products and ignorantly say: "If B can sell the things for £7 why cannot our manufacturers do the same?"

I offer no excuse for this digression as I want to press home four things:

(1) Unless a firm can obtain a certain minimum of orders each year it must lose money, for it has certain fixed charges that must be paid.

(2) The more work a firm is able to obtain within the capacity of its shops, that is without having to expand, the cheaper that firm can manufacture.

(3) That if our manufacturers are to compete abroad they must have home work to help them.

(4) That the more foreign work the firm obtains the cheaper it can tender in the home market.

It will therefore be easy to appreciate how greatly a young firm like the Coventry Ordnance Works was dependent on Admiralty orders to pay its way while trying to get a share of foreign contracts. Vickers and Armstrongs were old established suppliers to foreign countries, and it was indeed hard to get past the tentacles of these two firms and obtain even a minute footing in foreign markets. The result was that our shops at Coventry were never full; and, for the first four years that I was there, we lost steadily about £120,000 a year.

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During the fifth year, 1914, for the first time we turned the corner and were making a profit. Then came the War; and, with new shops built and old ones overflowing with work, the company was able, in the four years of the War, to wipe off the old deficit. But, as can well be imagined, those first four years were ones of hard work, anxiety, and disappointment.

I must add a few words about profit-sharing, a subject which at the time that I was at Coventry was much to the fore. Undoubtedly there are many businesses in which sharing profits with the employees is an excellent thing. There are, however, some important considerations which should not be overlooked.

In order to be fair, the employees should share losses as well as profits. This principle would hardly find favour with the majority of workmen. It should never be overlooked that the shareholders have risked their money in the venture, and that it is to them that the company owes its birth and existence. When a business has to go through bad times the shareholders receive no return for their money; so they quite properly look forward to being reimbursed during good times, and then to make up what they lost when bad times prevailed. But usually when good times come along there is an immediate demand for increases in wages, or bonus. This is not fair on the firm.

Another point is that, if after the workmen had received a bonus for several years, the firm came on evil times, and no bonus could be paid, there would be a tendency for the men to leave the employment of that firm and find work in other places which were in a more fortunate condition. Difficulties, such as these, would therefore be added to those affecting the hard-hit firm.

Again, although labour is all-important, for without labour manufacture could not exist, yet often the welfare of a firm is not greatly dependent on its workmen. They can, of course, by strikes and bad work and laziness damn a firm; but, speaking generally, the standard of the workmen is on the average much the same in all manufacturing concerns, but the pre-eminence of the business depends on the directors rather than on the mechanics. Profits are largely dependent on patent processes and patents, special

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machinery, cleverness on the part of the selling agents, well-judged advertisement, and the personal qualities of the directors.

It is impossible to stress too much the last of these. Profits depend to a large extent on the amount of work in hand; and, in order to obtain commercial and foreign orders, the personality of the directors and agents is *cæteris paribus* of the greatest importance. Charm of manner and transparent honesty capture more orders than any amount of advertisement. In fact, the matter could not be summed up more clearly than it was put to me in conversation with the most able head of one of the most successful engineering firms in the country.[1] He said colloquially: "Any fool can design a machine, and any fool can make one, but it takes a genius to sell it."

The representation of workmen on the Board of Directors presents a much greater difficulty than profit-sharing. A considerable amount of work carried out by the Board is confidential; tender prices must be kept secret and the financial position of the company is sometimes a matter of anxiety; information regarding rivals and clients may be important and secret. Immense damage might be done if transient difficulties were disclosed to competitors or clients. Since the workmen would naturally look to their representative to supply them with a full account of the business before the Board, that unfortunate individual would often find himself torn in two between loyalty to the Board and loyalty to the workmen. Taking these matters into consideration I have little doubt that it is really to the advantage of the men, as well as to the company, that they should not have a representative on the Board of Directors.

When I joined the Coventry Ordnance Works a strike was in progress. This I at once settled on common-sense lines, and I never had any further difficulty, except with the men of one trade, that of pattern makers, who struck for higher wages. This affected the whole district, but was settled without much bother. On all occasions I found the Trade Union officials most reasonable, and I fully appreciated the difficulties under which they worked. Often they would come with a complaint, which it did not require much insight to see was brought through the insistence of

[1] Sir Alfred Herbert, K.B.E.

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extremists, and which the officials found difficult to substantiate. I knew well that, unless they carried their point, they were certain to be heckled at the local meetings by the extremist section of the trades they represented, and would have by no means an easy time. They, therefore, had my sympathy, but nevertheless they nobly fulfilled their part as buffers between the management and the extremists, and obtained all reasonable concessions for the men. I always found individual workmen reasonable and charming to deal with. It was only when banded into a crowd that they were apt to be unreasonable—another example of crowd psychology.

There was one reform which I was most anxious to introduce into the works, namely, a ten-day holiday for each man on full pay; and, had we ever arrived at a time when our earnings had been sufficient to allow this, I should have asked for the consent of my brother directors to the proposal. But, in the then state of the firm's finances, such an ideal was unattainable. I believe that the good done to the men by freshening them up would practically have annulled the ten days' loss of work.

There is one rather good story told about my predecessor, who was a far-seeing man. At one time he heard that an order was going to be placed with the firm of Armstrong, Whitworth & Company for field guns and equipment. He thereupon bought up all the English seasoned oak suitable for the spokes of the gun carriages, limbers, and wagons, and further sent a man to the United States to do the same. After Armstrong had tendered a price to the Government for the equipment, Sir Andrew Noble, the head of that firm, wished to purchase spokes for the wheels, and his inquiries showed that all suitable material was owned by Mr. Mulliner. He therefore asked him to come to Newcastle-on-Tyne to discuss the matter. On arriving at Sir Andrew's office, Mr. Mulliner was shown into a waiting-room and kept waiting for some time. Mulliner had intended to ask a shilling for each spoke, but being rather a quick-tempered man he was greatly annoyed at being kept waiting for half an hour, so mentally put up the price to one-and-six. Another half-hour raised the price to two shillings, and a third to two-and-six, and this was the price Sir Andrew had to pay. This was

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probably the most expensive hour and a half of Sir Andrew's life.

While I was D.N.O. trouble arose with one of our large contracting firms over the manipulation of steel test pieces. All important steel forgings have small portions cut off, which are submitted to various tests in order to determine whether or not the forging comes up to the required standard. Such pieces can be improved by heat treatment; but, of course, if this is done their value as samples of the original forgings is destroyed. Information came to the Admiralty that test pieces had been monkeyed with in this fashion in the works of the firm in question. It was a very serious matter; but, extraordinary to relate, the chairman, who was also manager of the firm, instead of expressing regret and promising full investigation, and undertaking that, in future, steps would be taken to prevent any recurrence of the trouble, took exactly the opposite line. There was no course open to the Admiralty but to strike the firm off their list of contractors; and this ban held good until the chairman of the company resigned and another man, in whom the Admiralty had confidence, had been appointed in his place.

It seemed to me difficult to understand how such a fraud could have taken place without those high up in the firm being implicated. However, at Coventry one morning, Colonel Embury, who was the head of the inspection department, reported to me that the head examiner had been bowled out giving heat treatment to the test pieces of forgings that had been supplied by another firm. It seemed to me impossible. The man held a position of great trust, and it did not matter a farthing to him whether the steel passed the test or did not. His defence was that he could not bear to see forging after forging fail under test. The human brain is indeed fallible, and its action full of knots and kinks. He had, of course, to go, and I had to inform the Admiralty, War Office, and the foreign inspectors of the occurrence. This entailed a lot of bother and some considerable expense in retesting back material.

In 1911 we received our first order for five turret mountings of two guns each. In work of this nature every part of the ten mountings and the five turrets must be interchangeable one with the other. This necessitates a considerable number

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of what are called jigs being made. Take the simplest case. If ten plates have to have, say, a dozen holes of varying sizes drilled at the same places in each of the plates, a master plate called a 'jig' is made with these holes all bored to size and place. This is placed in turn over each of the ten plates and the holes drilled, using the holes in the 'jig' as a guide. But there are other 'jigs' infinitely more complicated. In addition to 'jigs' a variety of gauges and measuring instruments are required. Gauges measure sizes of holes, screw threads, lengths, etc. The accuracy required in first-class engineering work is almost inconceivable. A gauge exposed to the varying temperature of a shop may be looked on as inaccurate. The master gauges, with which all other gauges are compared, are kept in a special room at a constant temperature of 60 degrees Fahrenheit. The gauging of screw threads, in cases where accuracy was required, was frequently done by throwing a magnified image of the thread on a screen, in which case small inaccuracies can be detected visually, but in these days methods of far greater accuracy are available. As an everyday example of accurate work I will mention the case of the heavy slides along which the 13 5-inch guns and their cradles recoiled in the turrets. They were some twelve feet long and consisted essentially of a pair of very heavy steel beams of a section like an I. The surface of these had to be smooth and true. We made a machine for grinding these surfaces, as otherwise scraping and truing by hand would have taken six men for a fortnight. When first we used the machine we ground the surfaces without using water, where the slight heat generated by the emery wheel deflected these huge beams the three-thousandth part of an inch, so in future a stream of water was kept running on them during the process to keep the mass cool. I might remark that this three-thousandth part of an inch represented the difference in 'straightness' between a straight line and the arc of a circle of sixteen miles radius.

It may be of interest to know that a cylindrical gauge mathematically exactly six inches in diameter will not go through an equally accurate hole six inches in diameter.

After the hundreds of thousands of different parts of the turret mountings had been made, and each part assembled, they had to be dispatched to the works at Scotstoun, near

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Glasgow, where the turrets were mounted in pits exactly resembling the way in which they would be placed on board ship. After passing certain trials they were sent to the battleship for which they were intended.

When at last all were mounted the ship, H.M.S. *Conqueror*, left for her gunnery trials.

It happened that Mr. Churchill, who was First Lord of the Admiralty, was at Portsmouth and went out in the ship to watch the gun trials. They were a failure, and had to be abandoned. This was a great blow. Only two things were wrong, but these two affected all five turrets. The one which was the more apparent was due to a shaft having a hexagonal head instead of a square head, which, offhand, does not seem to be of very much importance, but, in reality, was a fatal oversight.

There was one other defect which was more difficult to run to earth, but, needless to say, run to earth it was, and both troubles were rectified; so that on the next occasion the trials were quite satisfactory. But, at the time, the failure was a bad blow.

There was only one bright spot in the two days we were at Portsmouth. Mr. J. B. Smith, one of our managers, a most valuable man, was with me, and was very down in the mouth as the result of the trials; so in order to buck him up, I looked down the hotel wine list and saw that there was some old Chateau Yquem, of which we had a bottle. It was simply perfect, and I bought the lot at the original price at which it had been laid down many years before.

The work of the company took me to Turkey. The Germanophile Young Turks were in power. Here there was little chance of obtaining orders for either the Army or Navy. The Army was furnished with military appliances exclusively from Germany, and the wants of the Navy, which had hitherto been supplied by Armstrong, Whitworth & Co., and John Brown & Co., were also falling into German hands. There we found the German Minister of Trade, who had come from Berlin, almost sitting on the steps of the Admiralty building, without any intention of leaving Constantinople until he had obtained the contracts he had in mind.

It would have been beyond the limits of sanity, in those

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days, to have suggested that the President of the British Board of Trade should demean himself and his office by personally visiting a foreign country to obtain orders for English firms. Even the British Embassy did not care to assist in matters where trade was concerned. Commercial attachés were then undreamed of.

Portugal we also visited; this time in a yacht belonging to Lord Furness. Mr. Charles Ellis from John Brown & Co., and Mr. W. L. Hichens, the Chairman of Cammell Laird & Co., were also among the party. Again we found little support for our endeavours.

In September 1913 I visited Japan to get into personal touch with the officers of the Japanese Navy Department who were responsible for the supply of armaments. My wife accompanied me. We travelled out through Canada, across the Pacific to Yokohama, and so to Tokyo, but I must leave an account of this visit to another chapter.

When the financial position of the Coventry Ordnance Works was at its worst, the directors approached Mr. Churchill and explained the situation to him. Briefly we pointed out that, either the Admiralty must give us a fair share of orders, or we must close down. The Controller of the Navy and the Director of Naval Ordnance were present at the interview. Both these officers were evidently not anxious to keep the Ordnance Works in existence. The employment of a third firm meant increased work for them, as well as for other departments of the Admiralty. It was so much simpler to have only the two firms of Vickers and Armstrongs. Two firms required less inspectors, less correspondence, etc. Mr. Winston Churchill, however, took the long and statesmanlike view, as is always the case when he is faced with a national problem. He looked outside the narrow official blinkers and saw in the Coventry Ordnance Works a national asset in case of war. He therefore gave a sympathetic promise of adequate help. It is indeed well that he did so, for the works were of immense value in the early days and throughout the whole of the War. They gave a nucleus for expansion of manufacture which increased month by month and turned out thousands of tons of armament work.[1]

[1] For a list of the manufactures of the Coventry Ordnance Works during the War, see Appendix IV.

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In June 1914, a little more than six weeks before the outbreak of war, I became seriously perturbed at our failure to obtain from the War Office an order for time fuses. We had a special fuse factory capable of turning out some thousands of fuses a week when working at full pressure. But, when idle, it was a very expensive establishment to keep up. I asked the War Office to give me a small order, even so small as 2000 fuses, merely to keep the machinery running and to prevent having to discharge the charge-hands and other members of the staff. They refused, and I had to lay up the machinery and pay off all except the manager, who was far too valuable a man to lose. In August, just before war was declared, the War Office asked me to take an order to turn out 20,000 fuses a week. I had to inform them that I had no workmen and no staff, that I was uncertain if I could obtain labour; and, at all events, it would be several weeks before I could commence to deliver fuses in quantities. It is interesting to compare the short-sightedness of the Director of Artillery or the Master-General of the Ordnance, whichever of these two officials had been responsible for keeping us out of work, with the attitude of Mr. Winston Churchill quoted above.

The moment war became a certainty the directors sanctioned an expansion of the works. Shops we could and did put up, but the difficulty that confronted us was that of providing machinery and finding the necessary skilled labour. I at once sent a representative over to America to try and buy every machine of the nature we required that was in good working order, and at the same time bought up all we could find in England.

I almost lived on the telephone answering urgent requests to take work, guns, limbers, wagons, etc. So we started in earnest to sub-contract all manner of articles with firms that had previously worked with us or which were of good repute. It was a case of getting orders placed as soon as possible before other firms filled up our friends' factories with their demands.

In the days previous to the outbreak of war, there had been little organization and forethought. There was only a hazy idea as to what the eventual requirements of any of the fighting services would be. It is true that we, at the

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Admiralty, had prepared a list of the orders for munitions which were to be issued immediately on the outbreak of war; but it was soon seen that this provision would be sufficient only for a first supply. At least so it seemed to me. I visited the Admiralty and there I was told by the Controller that the War would be over by Christmas! I replied: "Don't you believe it, it will last two years." I never anticipated a four-year war. But it was from the conviction that we were in for a two-year struggle, and that the armament firms would require thousands more skilled workmen than those who they already were employing, and that commercial firms were still carying on with peace manufactures and would not release workmen, that I told the Cabinet Committee that the Government would have to take over the skilled labour of the country,[1] and decide between necessary and luxury manufacture. At the moment no one foresaw the enormous demand that would arise for motor vehicles, and it seemed that motor-car works might well turn to armament manufacture—so difficult was it to see ahead.

The bombardment of the forts near Liége caused me to consider the possibility of designing a 15-inch heavy howitzer for road transport. It seemed to me that it would often be an advantage to mount a howitzer in places remote from railways, but which were reasonably near to macadamized roads. In such a case the gun, its mounting and platform, would have to be transported on road trucks, preferably with four wheels. If the design of the various parts could be arranged so as not to entail a greater weight than two tons on each wheel, then the scheme should be feasible. The howitzer itself presented the chief problem, since it was impossible to design one which would throw a 15-inch projectile and which would have a less weight than ten tons.

A brain-wave one morning led me to consider whether I could not make a howitzer in two parts, not on the same principle as the old mountain-gun, where the two parts screwed together in the middle: but a gun with a barrel that would slide in and out of its jacket. The charge of cordite for a howitzer is small compared to that of a gun of the same calibre, because a howitzer has only a short range,

[1] See page 339.

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of say 10,000 to 12,000 yards. The projectile is tossed up into the air at an angle of approximately forty-five degrees, and up it goes as high as Mont Blanc and then down it comes at a steep angle. Since the charge is small the pressure in the chamber also is small. It therefore seemed probable that a barrel could be designed with a wire winding which would of itself be strong enough to stand the chamber pressure, and yet not exceed six tons in weight. The jacket which was necessary as an additional security, and also to provide a strong attachment for fixing the recoil and run-out rods, might also fall within the six-ton limit.

I turned over the problem of calculation and design to my competent chief draughtsman, Mr. R. Redpath, who by noon the same day informed me that rough calculation showed that both these parts could be manufactured so as to be within the prescribed limit of weight.

I then went roughly into the details of the mounting, and of the assembly and taking to pieces of the various parts. The main desideratum that I had in mind was that all the parts should slide into place, so that no dead-weight lifting would be required. I need not go into details but the following is a general description of the outfit.

The platform was made of I section girders bolted to foundation plates; these carried spades on their underside to take the recoil of the gun mounting. When these had been put into place and bolted together, a truck brought on to this platform two heavy castings, one short and sturdy to support the front end of the carriage, and also to carry the pivot bolt; and the other a casting long enough to support the rear end of the mounting, and to allow it to train through an arc of about 10 degrees.

Above these came the carriage of the mounting. Then the cradle for the gun came on its truck, and its trunnions took over two horns one each side of the carriage, and then slid along and dropped into the trunnion bearings. The jacket of the gun slid into the cradle, and the barrel into the jacket. Then a breech brush was screwed into the jacket, behind the barrel, and the breech mechanism mounted in place.

The quickest time taken on service to assemble the mounting and gun after the platform had been put into

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place was forty-five minutes. There was a spare platform supplied with each gun, so that one could be sent on ahead and put in place before the gun and mounting arrived.

As soon as the sketch design of the gun and mounting had been made I approached the War Office with a view to its adoption. To my surprise I received an intimation that it was against the policy of the Army Council to employ heavy guns in the field!

The only explanation I could gather of this astounding statement was that Lord Kitchener was unfavourably impressed by the 6-inch guns landed in South Africa during the Boer War. The effect of having these guns was that, on several occasions, the infantry had a tendency to hang back and wait for the guns to shell posts instead of at once advancing. Whether this was the true explanation or not I cannot say.

Having been turned down by the War Office I approached Mr. Winston Churchill. Here I met with a very different reception. He at once saw the potential value of the guns and ordered twelve to be made. When, however, the design came to be examined by the Inspection Department at the Admiralty, they expressed an adverse opinion. This was based on the assumption that, on firing the gun, its barrel would jam in the jacket, and the gun, therefore, would not afterwards come to pieces. Mr. Churchill therefore called a meeting at the Admiralty. At this the representative of the Inspection Department had his say. I replied that I saw no reason why the steel of the barrel of the howitzer should behave differently from all other steel; for, if the steel was not stressed above its elastic limit, it most certainly would contract to its original dimensions the moment the pressure was relieved.[1] Here again Mr. Churchill showed his appreciation of values. He decided that one gun was to be made with all haste, and the other eleven pushed on. If, on trial, the first gun failed, then all work was to cease on the others, but if all went well, all were to be completed. He asked when I could finish the first gun and mounting. I replied by Christmas, a shade over three months, provided I was allowed to inspect

[1] In this opinion I had previously had the support of Mr. R. Carpmael, my gun constructor.

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and pass all the material which was used. I pointed out that naturally I was not going to pass any steel or other metal that was in any way doubtful; but that considerable time would be saved by avoiding the delays inherent to Governmental inspection. To this Mr. Churchill agreed.

The gun was completed to date and tried; and, of course, proved successful. In fact I fired one round with the barrel purposely not quite home in its jacket so as to leave it unsupported. Even after this test it fitted into the jacket perfectly.

I may say that the moment Mr. Churchill gave me the order for the howitzers I went to the drawing office and told them to order the gun forgings. Mr. Redpath pointed out that the design was only a sketch design and that time would be required to get out the exact dimensions. I replied that the sketch design would be good enough to go on, if a quarter of an inch was left on all surfaces of the forgings to allow for any increase in size that might be found necessary in the complete design. The result was that, within three hours, the orders for the forgings left for the Sheffield steelmakers.

One interesting little clash of arms took place in connection with the breech brush. Originally this was designed to screw in with a continuous thread, but it was found that, in practice, the weight of the metal combined with the fineness of the pitch caused the thread to seize up when even a microscopic amount of dust lodged in the threads. I therefore had portions of the thread cut away, so that it was turned into an 'interrupted' one. There was, of course, an ample factor of safety remaining, otherwise I should not have made so radical an alteration. Within forty-eight hours of my doing this I received a telegram from the Inspection Department at the Admiralty, saying that under no condition was the thread to be interrupted. I replied that it had already been done! So that was that! This is a good example of how manufacturers are at times hampered by a department. Undoubtedly the officials in question acted from the best motives, but their hurried and peremptory action might have delayed considerably the completion of the order; or not improbably have damned it altogether.

After designing the wagons I had to provide means of

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haulage. Fortunately, through the Daimler Company, I heard of the firm of Messrs. Foster of Lincoln who had been making 120-h.p. tractors for ploughing in the Argentine. I at once got into communication with Mr. William Tritton, the Managing Director, and ordered the number which we required.

While attending the trials of the tractors the idea struck me that we might convert some of these into machines for passing over trenches. Tanks, of course, were not at that time imagined. I proposed building a steel bridge longer than the width of a trench and carrying this in front of the tractor, which vehicle would be armoured and carry two machine-guns. On arriving at a trench it would drop the bridge over the trench and then itself pass over. When over, it would pick the bridge up behind itself. Then it would turn round and go stern first up to the next trench, and repeat the operation. Of course the tractors moved, and steered, equally well whether going forwards or backwards. In addition I proposed to fit two electric head-lights, and two lights showing one on each side of the tractor. These would have had glass fronts of about 2 feet in diameter on which would be outlined the faces of Chinese warriors of that ferocious aspect which Chinese drawings alone can depict. The tractors were noisy machines. So I hoped that the thunder of forty or fifty of these approaching a trench, and then suddenly switching on their head-lights, might have had a racking effect on the nerves of the men in the trenches. The tractor would then stop on its bridge, switch on the side lights, and enfilade the trench in both directions. I think the scheme might well have succeeded.

I put the proposition before Mr. Winston Churchill, who was pleased with the idea and sent me to see Lord Kitchener at the War Office. I met the latter in one of the passages. The first thing he said was : " I have just seen the Quartermaster-General of the French Army, who told me that at the battle of the Marne [which had been fought a few days before] the French field-guns had fired away one half of the whole outfit and reserve ammunition for that class of gun." It was certainly a staggering statement ; and, evidently, the fact that the French Army had consumed so large a percentage of their ammunition within three months

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15-INCH HOWITZER IN ACTION

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of the commencement of the War gave Lord Kitchener an entirely new conception of the requirements of modern warfare.

He was pleased with the idea of the tractors, and arranged to have one of the tractors tried. I was in France when the trial came off. Mr. Tritton gave me an account of it afterwards. The Army had no intention of allowing the trial to be successful. A sort of tank had been dug four feet deep into the ground, and this was flooded with water. It was through this bog that the tractor was supposed to make its way. Of course, the tractor stuck, and water found its way into the carburettor. Mr. Tritton's remark to the officer in charge was terse and to the point, viz., that "The tractor had not been designed to plough its way through the English Channel!"

However, Mr. Tritton was busy at that time trying to adapt caterpillar tracks to motors to fulfil a like purpose; and, eventually, with the help of Major Wilson, evolved the 'tank.' About which more anon.

After the gun had passed its trials satisfactorily I approached Mr. Churchill and asked to be allowed to go in command of the howitzers when they went to France. This he kindly approved. So having obtained the consent of my fellow directors I, with great regret, left the Coventry Ordnance Works. I had, it is true, borne the burden and heat of bad times, which, however, had been made as light as was possible by the kindness and understanding of my brother directors. A most charming Board,[1] and I felt it was rather a base desertion on my part to leave them just as the work of the Company was increasing by leaps and bounds; but I also knew my successor, Colonel John Mansell, was fully competent to take my place; probably more competent, for, in addition to his technical ability, he had a charm of manner to the like of which I could lay no claim. What a splendid and loyal fellow he was! His dry humour and cheerful disposition were a great asset. Rarely was he annoyed; and, if so, for only five seconds, when he would break out into a cheery laugh and look

[1] Mr. Charles Ellis, Mr. W. L. Hichens, Major Tressider, Captain Handley, Mr. Bernard Firth, Mr. Alexander Gracie. Subsequently Mr. W. Carter, who took the place of Captain Handley.

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on the bright side of his trouble. He worked very hard during the War, and I am glad to say that his labours were rewarded with a knighthood. He was most happily married, his courtship having matured on the fertile soil of private theatricals, for both he and his wife were good actors. I cannot refrain from telling a story about him, the point of which would be completely lost to anyone who did not know of the mutual affection that lasted throughout their lives.

He was gravely ill with double pneumonia, and one day when his mind was wandering he became obsessed with the idea that a man was coming from America to discuss certain business matters. He was very precise in his instructions, that the visitor was to be shown into the room, and seated in a particular chair by his bedside. During the day Mrs. Mansell came into the room; in his delirium he mistook her for his American friend, and greeted her warmly; told her to sit in the chair, and began to talk about some imaginary business. To quiet him Mrs. Mansell stroked his hand. He instantly grasped hers. The second after he had done so he recognized her touch, and fell back on to the bed; then, in his fevered disappointment muttered, "Same old damn wife!" How amused he was to hear the story after he had recovered!

It was because of the sterling qualities of Colonel Mansell that I had no qualms in asking permission to go to the War. I could not stay quietly at Coventry when war was going on. My life had been one long education to take my part in war, and I could not face the prospect of remaining inactive when the great crisis was no longer a mere possibility but a stern reality. It is so difficult to mention one colleague and not to do the same for others. But space permits me merely to record the help I received from Walter Macartney, R. H. Carpmael, Colonel Embury, and my secretary Mr. John Davis, and Mr. R. Redpath, our chief designer.

I was much touched by receiving on my departure a gift from my fellow directors as a recognition of the cordial manner in which we had worked together. The managers and workmen of the Coventry Ordnance Works also presented me with a large silver model of the 15-inch howitzer. I suggested that the subscriptions should go to start a fund for prizes for the apprentices; but the men would have

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none of the suggestion. I am therefore the possessor of a testimonial that I prize most highly.

While the guns were being made I asked the Admiralty to supply shell. They refused, saying that already the manufacturers were full of other work. This was rather unkind of them, as shell-making is very special work and usually requires particular machinery. In despair I approached Messrs. Somers of Halesowen, near Birmingham. They took on the work in the most sporting manner, and, without any special machines, forged the shell which we at Coventry machined. It was a splendid achievement, and I owe them a great debt of gratitude. The result was that by January 1915 we had twenty shells completed and filled. This does not sound a great quantity, but it was enough to equip the two first guns, with the promise of more to follow. It rather reminds me of a parson I knew who married on a hundred-pound debt and the promise of a pupil!

I am no believer in the supernatural, although some things happen which are difficult to explain. But then, again, nearly everything that exists in the world is beyond explanation; take two examples, life, and the attraction of gravity; these are not ascribed to supernatural causes, but they are merely monuments to the limits of our knowledge, and are to us beyond explanation. Further still, the 'supernatural' is merely a phrase which we can neither explain nor imagine. Why, then, ascribe events to a cause that itself is inexplicable?

The above diatribe was occasioned by a queer thing that happened about this time.

My son Dudley had joined up with the Durham Light Infantry and was home on leave. A sister of mine[1] had arrived from Scotland with a friend to stay for a few days; she had brought with her a planchette, in which she and her friend were very much interested. One evening, after dinner, my son, who was in uniform, my wife, and I were in the drawing-room reading. Our two guests were some fifteen to twenty feet away asking the planchette questions. They were, in fact, trying to get replies to questions as to the whereabouts of the latest murderer. No one present except my wife, not even my son, knew that I was going abroad

[1] Mrs. Crawshay Puleston.

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with the howitzers. I became tired of the murderer, so called out to my sister: "Ask Planchette who will go to the War first, Dudley or I?" The question was put and the answer was: "You will!" Naturally, to the others, this seemed absurd, for I had left the Navy and was Managing Director of the Coventry Ordnance Works, and apparently had no connection with the fighting forces.

I then said: "In what capacity shall I go?" Planchette answered: "In command." I said: "What shall I command?" And the reply came: "Siege guns." Now, although I had originally designed the howitzers for use against the forts on the Rhine, I had never called them, nor thought of them, except as howitzers. I then asked several other questions, which were answered reasonably, and then Planchette got tired and scribbled nonsense.

Now anyone who has worked a planchette knows how difficult it is for both operators to try to write the same word. Also, how impossible it is to write when two persons wish to write a different word, and lastly, how difficult it is for a single person to write a word in a reasonably flowing handwriting.

Even taking telepathy as an explanation, it is difficult to see how my brain could have influenced those of the two operators, and have caused them not only to write freely, and legibly, but to call howitzers siege guns.

Another inexplicable happening occurred to a friend of mine.[1] He has a perfectly matter-of-fact personality, and is by no means a man likely to be led away by flights of the imagination. Moreover, it would be utterly against his nature to invent the following story.

He was staying for a night with some English people who lived in a fifteenth-century *castello* in northern Italy. As a matter of fact, they are friends of mine also. Shortly after his arrival his host showed him to his room, and telling him it was next to the chapel, drew aside a curtain and opened a door giving on to a gallery, from whence he was able to look down towards the altar—an arrangement often to be found in old houses both in Italy and Spain. At dinner he sat next to one of the daughters of the house, who, during conversation, asked him which room he had been given. When he told her that it was the one next to the

[1] Sir Frederick Preston, K.B.E.

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chapel she appeared much annoyed and said that her father "should not have given you that one," or words to that effect. During the night he awoke with a start to find an old woman dressed in the costume of a bygone age sitting on the side of his bed and trying with all her might to strangle him. In a moment he was perfectly awake and, after a violent struggle, she relaxed her hold and disappeared. He assured me that he was absolutely wide awake during the struggle. Next morning the girl asked him how he had slept, and when he told her the story she confessed that the same thing had happened to others who had slept in that same room.

This appears to be inexplicable, but in fact it is no more so than why a mustard seed produces a mustard plant. Both are beyond our knowledge, yet one is a commonplace occurrence and the other decidedly out of the ordinary. Trace it back if you like to the girl's mind impressing the mental picture on my friend's mind, without his knowledge, when she heard, to her horror, that he had been given that particular room; and that during the night the impression vividly asserted itself. But even this hypothesis is merely juggling with words. Mind, impression, mental pictures are mere terms to cover abstract ideas of which we have no actual knowledge. Ghosts, moreover, in most of our minds, are associated with after-death penance, and the old-fashioned idea of hell and eternal punishment; some portion of which, for some occult reason, consisted, in the case of ghosts, of being doomed to visit this world and annoy its inhabitants. These fictions have now vanished or are vanishing, but, talking of hell, I am reminded of a story told me by my sister.[1] She had what she stigmatized as a 'very wicked old cook.' What her particular failings were I know not, nor does it matter. One Sunday she took the old lady to church, I suppose with a view to her conversion, where they were treated to a modern sermon on the subject of hell, which set forth the view that fire and brimstone were obsolete, and that regret, and mental torture in the future, would serve as punishment to the wicked. On leaving the church the old lady sidled up to my sister and said: "Ain't it a good thing, mum, that they've done away with 'ell?"

[1] Mrs. Crawshay Puleston.

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Chapter XI

JAPAN

IN THE AUTUMN OF 1913 I WENT, AT THE REQUEST OF MY brother directors, on a visit to Japan, the main object of which was to explore the possibility of the Coventry Ordnance obtaining orders from the Japanese Government. It was felt that the only way of so doing was for one of our number to pay a visit, and get in personal touch with the high naval officials, and point out the advantages that we as a young firm possessed for the manufacture of armaments. On the way I was to visit our Canadian agency, and after Japan to do the same at Pekin and in Russia. My wife accompanied me and assisted most nobly in helping me to return the many civilities we received during our stay at the various places. We crossed to Canada in the *Royal Edward*, with little of interest to relate. We passed plenty of ice, and when in the straits of Belle Isle we were able to count twenty-five bergs at one time. The disaster that befell the *Titanic* was still fresh in our minds and caused those to whom the sight of icebergs was a novelty to feel a trifle uncomfortable. The increase in the comfort of sea travel was brought home to us by a fellow passenger, who had travelled in the finest liner between Canada and England twenty years before, in a second-class cabin that measured 12 feet by 15 feet and which held nine bunks and only one basin. In the middle was a table covered with American cloth, on which the scraps from the first-class saloon were placed for the nine occupants to fight for. Even in 1913 the comfort of our cabin fell far below that of those now met with in ordinary liners.

After six days' passage we landed for a few hours at Quebec. The Heights of Abraham, to our untutored expectation, appeared rather low and insignificant; but for ever memorable as the only battlefield on which both the opposing commanders-in-chief were mortally wounded.

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Next day we reached Ottawa, the capital of Canada as laid down by the arbitration award of Queen Victoria, who was called on to decide between the rival merits of Ottawa, Montreal, and Toronto. We only stayed a couple of days in Ottawa, and had no time to visit Niagara. We were slightly recompensed for the omission by remembering the classic American statement that, compared to the Victoria Falls, Niagara was a mere perspiration! The C.P.R. took us through a wonderful variety of country, birch, scrub, and lakes, and then between Winnipeg and Calgary through the wheat country. A yellow ocean without a hedge and only rarely a human habitation. There is little poetry about Canadian farming. The farmer who owns the land may plough it himself but often lets the ploughing out. He probably sows the seed himself, and then waits for the harvest, when the corn is cut, gathered, and threshed by contract. It is then taken away to be stored in huge elevators, and afterwards run into trucks and transported to the coast, all this by mechanical means. How different to the personal interest of the English farmer in his land, his men, and his horses. When I was a boy the corn was still reaped with a sickle and bound into sheaves by hand. The midday meal and cider were taken under a hedge; and then, when fit to carry, the wagons carted it to the stack and the women gleaned. I remember that small quantities of corn were still threshed with a flail.

A landslide at Banff led to our being diverted through the Kootenay and Arrowhead lakes. We had not exactly a restful night, for we left the train and embarked on a steamer on the Kootenay, then disembarked into a train about midnight, re-embarked on the Arrowhead about 2 a.m., and finally disembarked and found our train again after a 150-mile trip down the lake.

Night travelling on the C.P.R. in those days was slightly embarrassing to the novice. The pullman car was a speciality of western travelling, the seats of which make up into bunks at night, and a second tier hinge out from the wall of the car above the lower ones; green curtains were drawn each side for the whole length of the car, leaving a narrow gangway down the centre. Some schooling is required to get used to the publicity and technique of such a dormitory.

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The lower bunks are better than the upper ones, for it is possible there to dress and undress standing up without being exposed to the gaze of the person in the upper bunk, your figure being merely outlined by the bulges in the curtain during struggles with refractory garments. But the occupant of the upper bunk has to perform the gymnastic feat of dressing while lying down. Separate wash places for the two sexes are provided at the end of the car. However, it is wonderful how smoothly things go.

Of course incidents are bound to arise. One mother who was blessed with an infant (if indeed an infant on a journey can be designated a blessing) deposited it in the upper bunk while she prepared the bottle at the end of the car. Intermittent cries hurried the breakfast preparations; and during an interval of silence she hurriedly returned, somewhat flustered, and pushed the mouthpiece over the edge of the bunk into what should have been the infant's mouth, but was met with: "What the devil are you doing with that infernal thing?" from an irate male passenger.

We arrived at Vancouver just in time to catch the C.P.R. liner *Empress of Asia*. We called at Victoria on Vancouver Island, opposite the city of Vancouver, and then for ten days crossed the North Pacific in fine weather, coming in for the tail of a typhoon when nearing the coast of Japan. Fortunately we missed the greater part of the gale.

When one hundred miles from Yokohama I was surprised to get a wireless message of greeting from the Japanese Admiralty, which also informed me that Admiral Oguri had been detailed to look after me during my stay in Japan. I had not had any idea that the Japanese Admiralty knew that I was coming. Undoubtedly the cause of their courtesy, and of the very kind way I was subsequently received wherever I went, was due to a small service I had been able to render to the Japanese when in command of the Submarine Service.

In 1904 the First Sea Lord sent for me and told me that the Japanese were anxious to learn about submarine boats, and that although owing to their war with Russia they could not be given official information, yet he wished me to do what I could in the matter, and they had no objection to facilities being given to the Japanese naval attaché to visit

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the boats. I accordingly trained an officer crew; that is, the officers took all the manipulatory posts, and one morning at 6 a.m. we embarked Captain Oguri, the naval attaché, at Stokes Bay pier and took him for a run in one of the boats, and further gave him all the information he required anent them. Again, when I was D.N.O., and we tumbled into difficulties with cordite, I sent for the Japanese attaché, warned him of the dangers we had encountered, and told him of the steps we had taken to avert premature explosions. Although this met with a certain amount of criticism, I considered it to be only a humane procedure. I knew that the information would be passed on to the other attachés. No amount of insularity, or red tape secrecy, could have exonerated us, if ships' companies of foreign navies had been lost in peace time through causes which it lay in our power to prevent. The Japanese Admiralty apparently remembered these happenings, which had quite escaped from my mind. Hence our kindly reception in the Empire of Japan.

I learned from Admiral Oguri, who was the Director of Naval Ordnance at the Admiralty, that the policy of the Japanese Government was to manufacture their own armaments and build their own ships; and that they intended, if possible, to place no orders outside the country. Of course, there was always the possible contingency that a state of urgency might arise when orders would have to be placed with foreign countries. I therefore determined to see the principal naval and military officials, explain to them the position that the Coventry Ordnance Works held in the armament world, and give them a good idea of our capacity for turning out work. The Admiralty in turn allowed me to visit their two principal dockyards. I then mapped out a stay of just six weeks, during which time I paid visits to the Admiralty and War Office in Tokyo, and made friends with as many naval officers and officials as opportunity permitted; and, in between my engagements, saw as much of Japan as circumstance allowed.

I confess to having left Japan with great regret and there is no place on the face of the globe that I would sooner visit again. The scenery was delightful, and at the same time quaint, and therefore not easy to describe. Everything

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in sight differs from that which would be seen in England. In all the contours of the landscape, as they change from plain to mountains, even in the rivers and the valleys, there is always some feature that engages the eye and stamps the view as distinctly Japanese. The houses, for instance, could never be mistaken for the design or handicraft of any but these delightfully artistic little folk. The grey roofs with their concave tilings and deep central ridge, with an upturn at each end, the absence of windows, presence of paper screens, and vertical lattice work, the wooden walls, either new or weathered, or painted white, the absence of identity of design between house and house, except that of fundamentality of character which stamps each with a peculiar similarity. Then again the fields, mainly growing rice or cultivated in small plots, without hedges or divisions, except those due to the variations in the crops themselves. Maize, sweet potatoes, tea, all differing from any English crop. It is only in the twilight, when the bright colouring has been toned down into one uniform green, and the houses have become blotches without sharp definition of outline, that the landscape is transformed from being essentially Japanese to being truly similar to English scenery.

Every walk, or stroll, brings totally new visions of the life of the people. The mother carrying her baby on her back, the peculiar dip of the clog or the sandal in walking, its clack-clack on the hard ground or pavement, are parts of Japan. The Shinto shrine or temple in its grove of camphor trees, its torii and pagoda-like roof, with perhaps white sheets forty or more feet in height covered with ideographic characters proclaiming the sanctity of the spot. The trees may be found to be studded with nails; for here girls disappointed in their lovers come to pray to the tree god, and drive in nail after nail in the hope that the spirit of the temple will grant their prayers in order to stop the driving of nails and thus save the life of the trees.

In their manners the Japanese differ considerably from the European nations. The two marked characteristics are politeness, and a placidity of temperament. This causes them to look on a loss of temper as a breach of good manners, and one that provokes mingled amusement and contempt. Politeness is the keynote of intercourse. From the highest

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to the lowest, from the rich and the poor, from youth and old age, politeness is universally met with. The children at play in the streets bow ceremonially to each other, never quarrel, and rarely cry. The grown-ups bow low two, three, and four times on meeting, and whisper meanwhile salutations. We were told that it was usual on meeting to make some such remark as : ' I regret I was so rude on the last occasion that we met.' To which the correct answer is : ' Not at all, the rudeness was all on my part.' This is now abbreviated into ' The last time ' and ' Not at all.' After dining, on meeting your late host, it is not uncommon to say : ' When I dined with you I became very drunk.' Not that you were in the slightest degree intoxicated ; but it is said to convey the idea that the hospitality was lavish. The profuseness of the bowing can only be explained on the supposition that it is impolite to leave off so doing before the other person. Consequently if, when rising after remaining bent for a reasonable time, you see the other person doubled up, you immediately bob down again. Your opponent does the same ; so bending and bobs continue until the law of averages arranges that you both rise at the same moment.

Like the Irish, the Japanese dislike to tell you anything that will cause you disappointment. Hence, at the large store in Tokyo, we were sent from department to department and from top floor to basement to find some trifle which everyone of our informers knew perfectly well was not to be bought in the store ; but not one of them could bring himself to tell us so, and thus cause us disappointment.

In like manner it is against the nature of the Japanese to cause pain. I happened to call on a high official at the Admiralty who, a few days before, had lost his wife. On my saying a few words of condolence, he broke out with a laugh and said : " Oh, that is nothing." I was absolutely dumbfounded, but afterwards I was told that his seeming indifference was merely assumed, so that his own personal sorrow should not affect a third person.

The thoroughness of the Japanese is well shown by their theatrical programmes. In a native theatre the performance starts at 8 a.m. and continues till 10 p.m. or later. In the principal theatre in Tokyo this custom had, a few

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years before, been amended, and proceedings began at 4.30 p.m.

We were entertained by the Director of Naval Construction and some other Admiralty officials to dinner at the theatre. The main piece was *La Mascotte*. Operatic pieces were a recent innovation and had led to the great reform of women taking the female parts of the play; before this, these were taken by men speaking in a high falsetto. The make-ups were good, but there was a plethora of yellow wigs which rather spoiled the effect. After the main production we had several Japanese pieces. These were largely dialogues with a third person rarely joining in. All were legends of the Daimyo era, with plenty of blood and thunder, with a few *hara-kiris* thrown in, which were acted with almost too vivid a realism. The seats were of European design, but many of the Japanese tucked their feet up and sat on them, for they found sitting in European fashion just as tiring and uncomfortable as we found the Japanese fashion of squatting on the floor. The dinner was good and well served, and a great relaxation from watching the long programme.

I visited Admiral Murakami who was in command at Kure. Here we had the experience of staying in a native inn. Let me at once say that to stay in a native inn, run in native custom, is an experience to be indulged in with caution. It is only necessary to describe the chief features of such an hostelry for the imagination to fill in the possibilities that may arise in inns of the second, third, or fourth categories.

We arrived at Kure in the afternoon of Friday, November 7, at about four o'clock, and were met at the station by two officers sent by the Admiral to welcome us, and to invite us to dine with him at six o'clock. Having exchanged the usual formalities in simple English we mounted rickshaws and jolted to the inn. The road was quite a bad one, which was rather astonishing, as it was the main route to and from the railway station. In five minutes we turned under the arch and with a 'fanfare' of the rickshaw bicycle bells halted at the door of the Kikhikawa Hotel. The proprietress received us on her knees bowing low, we also bowed as low as our age permitted, and then took off our boots and put

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on slippers of the coldest and scantiest description. It is always a matter of congratulation if no hole in a stocking or sock comes to view when the boots come off! Our hostess then took Cicely's right hand in her right hand, and the two shuffled off to inspect our rooms, Fujita, our interpreter, and I bringing up the rear in a less honoured but more comfortable manner.

We found two rooms had been reserved for us, each of which was furnished in the usual Japanese manner, with a charcoal stove, or stone vase complete with charcoal and ash, mats on the floor, one *kakemono*, or hanging picture, and two chrysanthemums in a bamboo vase, *voila tout!* Not a stick of anything else. The two rooms were really composed of one wall and a ceiling; the other three walls being paper screens. Paper screens allowed the rooms, at will, to be two, or thrown into one. Obviously, from the furnishing, it was merely a matter of choice which room was the bedroom and which was the sitting-room.

After a short interval the hostess again appeared and we presented her with the usual *chadai*, or tea money, that is a tip for herself and all the servants. Fujita managed somehow to produce a table and two chairs, the feet of which were fitted with wooden slats to prevent the mats from being damaged; and here the resources of the hotel seemed to end. As, however, we had been travelling for twenty-four hours, and, in a short time, were due to appear in public at dinner, we asked Fujita to show us where we could wash our hands. After consultation with a maiden he let us solemnly to a yard, like all Japanese backyards charmingly gardened with drawf trees, and there was a tub, and in the tub a ladle with a long handle, which the maiden dipped into the water and then signed to us to hold out our hands while she poured it over them. There was no soap, but hanging on a nail close by we spied the 'hotel towel.' We simply turned and fled and collapsed in inane giggles in either our drawing-room or bedroom, I know not which. Fujita appeared looking astonished and sorrowful; so we explained that we wanted something, either a soup plate or a *saké* cup, out in our own backyard where we might use soap, and that it was absolutely necessary for us to have a whole towel to ourselves. This he promised to arrange

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and left to do so. How many of the yards and verandas he wandered through to get it I know not, but after some minutes he returned to know if we wanted a ' clean ' towel. We could not trust ourselves to do more than murmur ' yes,' and fortunately he retired at once and did not see Cicely in a threatened attack of hysterics. In the end we got it all, quite a good basin and a clean towel; these were placed on the floor of the veranda, so that by standing in the garden the basin was at a convenient height. It was too dark to photograph Cicely, so the view of her public ablutions is lost to the family archives. But the garden was in reality no more public than our rooms, as there were no doors and no locks to the walls; so, at any moment, anyone might open a wall and pop in their head. Three sides of the room suffered from this want of security, a privilege which was fully taken advantage of by Fujita and the hotel personnel in their anxiety to please.

We dressed for the banquet; and for the first time in our lives dined out in blue felt slippers. Once more Cicely was led by the hand, in state, to the reception-room, where we found several naval officers assembled in native dress with whom we conversed for some time; finally we were led to the dining-room, where we met our host and the remainder of the party. The dining-room was lavishly furnished with eight cushions arranged on the floor in three sides of a square; two in the centre and three at each wing. Two and a half sides of the room were open to the air, but the room was not cold. We squatted down, C. and I on the centre cushions, our host on C.'s right.

Dinner began by eight little maids varying in age from ten to eighteen bringing in lacquer stands, kneeling down and putting one in front of each guest; then, after bowing, they shot straight upright and waddle-shuffled away to bring in the dishes. The walk which I have irreverently referred to as waddle-shuffling is really quite a fascinating movement, and is, probably, the result of three things, wearing sandals only kept on by a string between the big toe and its next-door neighbour, which in itself prevents high stepping; a kimono which prevents a free forward motion of the knees, and the tight *obi* or sash. The knees are kept slightly bent, the body upright, the feet lifted a

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minimum from the mats and moved almost at a run; the result is rather a graceful glide.

Well, to return to our food; it was all in porcelain or lacquer bowls, some covered, some uncovered, the contents of which were all unknown. Our host explained that the brown *salmis* was sparrow; there was soup in a bowl; fried fish; cucumber, or some analogous vegetable, in another dish; a little bowl of Japanese sauce in a third; and, then, we were given two chop-sticks, as yet unbroken and therefore previously unused. Such was the first course, but before eating we waited for the *saké*, or native spirits, to arrive. This is brought in blue-and-white china bottles by the same damsels. The *saké* was served warm and drunk in small blue-and-white china cups; more often lacquer cups without handles are used. A lacquer bowl of water is also placed near by, the use of which will presently be explained. After drinking the *saké* the chop-sticks are broken and dinner begins. There is no recognized sequence in which to attack the dishes; you merely dip the chop-sticks into any that you fancy and smoke cigarettes, talking in between, so that dinner develops into an intermittent pecking. All this time the little maids have been kneeling one in front of each guest. After an interval they shoot up from their kneeling position and 'wadshuf' away to bring more dishes and place them beside the others. No dish is ever cleared away. This time a bowl of eggs and fish in soup has to be eaten with chop-sticks, and the old dishes pecked at. Then, in order to pander to our peculiarities, some boiled tongue was served; and, in the end, came Japanese pickles. These require careful sampling before eating, for their flavour is that which we all associate with very ancient cheese, only more so. Throughout the dinner *saké* was drunk; but in our case mineral water was also provided. After dinner the host comes and kneels in front of each guest, the waitress then fills his or her cup with *saké*, which the guest, after bowing, drinks and then dips the cup in the water lying in the lacquer bowl and then hands it to the host, who in turn drinks; he then dips the cup in the water and hands it once more to the guest. He performs this *saké* ceremony with all the company.

If two people drink in this way it is unlucky for either

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to fill the cup; this should be done by a third person. If friends are leaving for war, or may be parting for ever, water and not *saké* is drunk. At weddings the bride and bridegroom drink out of three different-sized cups, three times out of each, nine cups in all. Besides the ceremony of drinking *saké* with your host, the mistress of the inn comes and kneels and drinks with each guest, then some of the more favoured of the serving maids come in for their share of the *saké*, and right royally do they drink cup after cup without apparently harmful result. *Saké* is not very powerful; it is a mild spirit with a sherry flavour. At convivial parties, such as the one at the Kai-yo-kan (the Maple-Tree club in Tokyo, where we dined with Admiral Oguri), paper, stone, and scissor betting takes place with the maids to decide whether they or the guests have to drink; the loser has to drink a cup. Quite a lot of *saké* can be got through in an evening in this way. The maids are quite a feature in the entertainment, a considerable portion of the conversation being carried on between them and the guests. They, from practice, appear to be far better conversationalists than the Japanese ladies.

After *saké* had been drunk with the host, *geishas* appeared and danced. Their costumes were bright and pretty, but their dancing was mostly posture and posing without any steps. It was graceful but nothing more. Dinner was ended by a cup of tea; when this has been drunk the guests then say good-bye. Cicely, again, was ceremonially led to our rooms, which we found had been changed, and larger ones on the first floor allotted to us. The knotty point as to the use of each room was solved by beds, called 'futtons,' being placed on the floor of one of them. We were most comfortable during the night, as a thick palliasse had been placed under the ordinary futton; a sheet covered the top of the futton and the upper clothes consisted of a *duvet* with a sheet sewn underneath and over the top edge. Our chief trouble was that there was nothing to keep the pillows from slipping off the end of the bed. Safety-pins seemed to be the best solution.

In the morning we found that the hostess had provided a good basin and iron wash-stand, and we washed in the passage. To have washed in the room might have damaged the mats.

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We photographed the rooms, and it was with the greatest difficulty that we herded the old innkeeperess away from the front of the camera. As soon as we hunted her out through the one wall she reappeared through another, and nothing could make her understand that she was not wanted: our gesticulations, and anxiety, merely convinced her that there was something that we wanted exceptionally badly; she therefore, time after time, returned through an unexpected wall with what she thought was a new solution to the problem. However, as we were using a long time-exposure the plate was not damaged.

The bath in the Japanese inn is common property; the bathers change but the water does not, so it is not etiquette to use soap in the bath. If you wish for such luxurious cleanliness you must soap yourself down while standing in the open. The whole of the inmates will probably come and watch the proceedings. Needless to say we were not brave enough to try this experiment and undergo so unique an experience.

While I photographed the inn Cicely sat in the porch, because she had her boots on. This sounds rather inconsequent, but it would have been necessary for her to have taken them off again to re-enter the house. The female portion of the inn crowded round and examined her little knick-knacks, such as lorgnettes, watch, small dressing-case, hat, etc., with much wonder and excitement and chattering. In fact, wherever Cicely went in Japan the old people gazed at her furtively, the women stared, the children laughed, and the babies howled. Such was the varied effect of fashionable European costume. With much bowing we mounted our rickshaws, the whole establishment bowing also, and with kindly wishes of farewell, away we jogged to the railway station.

We spent a few days at Miyajima, which is probably the most peaceful place in the civilized world, an island, well sheltered in the Inland sea, towering above its neighbours, covered with forests, with merely a village or two fringing on the sea. From rest to slumber is easy, from somnolence to veneration is but a step; hence we find that the rules of life on the island are framed so as to lull the imagination into a belief that this oasis, at all events, is outside the

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region of earthly change. So far as is possible no births or deaths are allowed to take place on the island, no animal is killed or hunted; thus beyond growing up and growing old, none of the evidences of mortality exist. One result of this regime is that the birds and animals are quite tame. The deer living wild in the forest come down to the beach in the cool of the morning and evening, and feed from the hand of anyone they may meet. The *torri* or entrance gate to the temple is out at sea, and only once a year does a boat pass through, when the high priest makes a formal entry into the temple.

While waiting at Tokyo to wind up our visit we made a pilgrimage to Nikko. 'Those who have not visited Nikko should not use the word beautiful,' runs the Japanese proverb. At the end of October we found much truth in the statement. Nikko at any time is beautiful but not more so than many other mountain districts; but its glory is seen to the full when decked in the autumn with tints which literally clothe the hills with a mantle woven of all shades of gold and brown. Here truly Nature has been munificent in the provision of a variety of trees the foliage of which changes at the same time. The beech varying in shade from lemon to brown, the spruce throwing upwards its golden spines, the brown of the chestnut, the crimson of the cherry; and, last of all, the maple contributes great splashes of bright vermilion in an apparent attempt to outvie the other colours, but, in reality, serving merely to enhance the more sober beauty of the other tints. Besides these there is the cryptomaria with its deep, almost black, velvety green, which stands aloof, a monument of permanence amid decay. The whole effect is as if Nature had upset her paint-box over the landscape, and then called in the softening brush of the mountain atmosphere to burnish and blend the various hues.

Nikko is famous for its temples, and we were fortunate in having an introduction to the High Priest, Mr. Nasheko Achiwa, who showed us over the principal building. It was necessary for us to be purified before entering the inner shrine, a ceremony which is performed by waving a rod, to which hangs a bunch of holy paper, over and around us. I thought it unnecessary that, while the remainder of our

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party were purified *en bloc*, I should have been treated to a separate and exclusive purification.

Everyone who has visited the bazaars of Eastern towns has come under the spell of Oriental bargaining. It is a game to the buyer and seller alike. In fact, a merchant is almost disappointed if he receives at once the price he has asked. It is not unlike the mingled feelings of a player whose opponent scratches when the gain of promotion in the tournament is balanced by the loss of a good game. In Japan the game is played to the full, and you may be fairly certain that the price at first asked is about 10 per cent above that which will eventually be accepted. I jotted down the following description a few days after a battle with a venerable merchant at Nikko.

"Father he say he make you special price." So spake the fascinating daughter of old Sasamoto, the curio dealer opposite the Nikko Hotel.

Quite the typical curio dealer is old Sasamoto, dried up, with every tooth heavily stopped with gold, and gold spectacles well down on his nose, both hands on his knees, which are usually bent forward in the incessant act of bowing; such was 'Father,' who made us the 'special special price.'

The interpreter, his daughter, was the real salesman. 'Father' knew the history and value of everything, but the artless yet artful daughter palmed off the treasures as a conjurer forces cards. The excuse for a 'special special price' was because we had casually met at the hotel a man who the previous year had bought something at the shop. This was quite good enough for an introduction to the little sales lady, quite good enough to start a conversation and inveigle the unwary fly into the webby parlour.

"How much these lanterns?"

"Father he make you special price, one hundred and twenty yen"[1]; lucky shot that, as it was thirty yen less than the price asked by the other man in the main street down below. The fly almost began to believe that Father was making 'special special prices,' and his interest rose at the probability of still further beating him down.

"Our price all one price, not like other people's who ask much and make discount." The interpreter knew this

[1] The yen then stood at two shillings.

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would lead to argument, the statement being on the face of it more than improbable.

"Father, he want you to have cup of tea." The fly protested, but in expiation of the discourtesy of refusal was forced to take the proffered seat in the back room.

Alas! poor fly! The web is nearly round you as old spectacled 'Father' produces box after box of treasures which glue you to your seat and make your eyes envious.

It was well worth while watching 'Father' as he unwrapped his treasures tenderly, almost lovingly, unwinding the paper, unfolding the silk handkerchief in which the lacquer had nestled, and stroking it with his long fingers with an almost lingering caress. Was all this put on? We wondered. Was it all part of the art of selling, or was the old man really miserly about parting with his treasures? It was impossible to say.

"Father, he say no more workmen make these things."

This brings us back to business and a casual inquiry as to the price of a small tortoise-shell and gold cabinet about three inches high. "Father, he say that he never get other cabinets like this, he want a special price of one hundred and twenty yen."

Now this brings matters to a point where acquisitiveness is pitted against £ s. d. and consideration is required. A shrug of the shoulders, a sweep of the hand as if to pass the cabinet into oblivion, is the first move, while the details of value and probable reduction can be considered at quiet length. The saleswoman counters with:

"Father, he say he can never buy another cabinet like that," as she puts it slightly farther off, but in a better light; and old 'Father,' playing up, puts another treasure on the table, this time a carved ivory ship with the seven gods as a crew. The next few moments are important ones to the saleswoman, as she must gauge whether the new article is likely to catch the fancy of the buyer. A little hesitation, a close scrutiny on the part of the buyer, and matters appear hopeful to her, so she immediately harks back to the cabinet. "Father, he say he would have sold cabinet to the Emperor, only he buy it after Emperor has gone from Nikko!"

"How much the ivory?"

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"Father, he say as special price two hundred and forty yen."

"What is the very lowest your father will take?" And 'Father' dives into a still more inner room and produces a book the size and shape of a pattern book of what tailors call 'suitings,' licks his fingers, and turns the pages in search of the details of the purchase price of the treasure. Is it real or make-believe? Is the elaborate mental calculation that follows humbug or real?

"Father, he say special special price two hundred and thirty-two yen." Of course the price will come down, but is it good enough at all to buy at a price which must run into several hundred yen? The fly and his mate consult *sotto voce* as to the principle of buying, and it is decided to purchase all three at a reasonable figure.

"How much all three: lanterns, cabinet, ivory?"

'Father' now dives again into the inner haunts and with quivery spectacles consults his account book, while his fingers hook the beads of his abacus in its various columns. Four hundred and eighty yen is the verdict.

"Too much."

"Father, he say look at cabinet, look at little silver bird, look at little gold bird, never such work now; and ship, the god of Health, the god of War, the goddess of Beauty, all different; now no work like that, it cost plenty much for food now, no more able to make carvings like this one. Father, he say he pack it very carefully. You know Sir Brownrigg?[1] He write letter. You know Captain Brand?[2] He also write letter," and various letters of recommendation are produced while the voluble interpretess rattles on and the old man fingers his treasures with the same old lingering regard, as if loth to let them go.

"I give four hundred and fifty." The drop is a big one.

"But Father, he say let him make his little profit. At four hundred and fifty he make nothing. He travel all parts of Japan to find these things. Four hundred and fifty yen, ouh."

"If your father buy at too high price not my fault; four hundred and fifty yen I give. Tell your father it nearly winter, no one come to Nikko for nearly six months. Four hundred and fifty yen in the bank for six months means plenty interest."

[1] Admiral Sir Douglas Brownrigg, Bart.
[2] Admiral Honble. Sir Hubert Brand, G.C.B.

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"Father, he say it cannot be, he must make his small profit."

Silence supervenes. The deadlock will apparently last, the subject must be changed.

"Have you any lacquer bowls?" And wedding *saké* bowls are produced, and their merits discussed; also, incidentally, silver chop-sticks come on the scene, and we listen to a disquisition on the old customs of only allowing those of the rank of Daimyo to use gold or silver for any purpose, until, at last, the subject returns to the main purchase. Darkness is coming on. We are becoming tired; and, knowing well that tiredness brings with it weakness and complacency, matters must be brought to a head. The cheque-book is produced.

"Ask your father if I shall write a cheque for four hundred and fifty yen."

"Father say special price four hundred and seventy-five yen."

"No, four hundred and fifty yen or nothing," and then the old man writhes and squirms, protests, chatters and caresses his goods all at once, until, eventually, the cheque-book closes still blank and unwritten.

"Father, he give you present of bowl and chop-sticks," suddenly cries the little lady, as 'Father's' claws push these articles across the table.

"Father, he make you present. You give him four hundred and seventy-five yen."

"Your father he give me three yen worth of things and wants twenty-five yen," said the hard-hearted bargainer. "We're tired and must go." This brings a fresh access of squirming.

"Father, he say come upstairs and see his plenty fine things." This, of course, is merely a time-saver, but we acquiesce and wander round Buddhas and bronzes with listlessness. We finally descend to the shop, but as we pass the little room chairs are once more pulled out, and, again, we find ourselves seated to hear the monotonous but seductive little person saying:

"Father, he say it nearly winter and no sell much."

Out comes the cheque book again. "Shall I write four hundred and fifty yen?" And then come squirms, pro-

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tests, and wriggles, ending with the usual: "You recommend to all your friends. If you recommend Father he sell you everything. Lanterns, cabinet, ivory, for four hundred and fifty yen." Then comes the question of freight; it is settled by Father paying the freight to Yokohama, and Father presents us with the silver chop-sticks. We leave amid many bows and scrapings and a parting: "Father, he say you write him a letter from England to say packing very careful." So ended three hours' barter, and now for tea at the hotel.

After tea, while strolling through the curio stalls usual at an hotel, we lighted on the three monkeys, the 'See,' 'Hear,' and 'Speak no evil' trio, which we wanted. Three yen was asked, two-fifty as special price. Hotel stall-holders are generally robbers, and this we knew to be a shilling more than the market price. So, as a matter of principle, we refused to buy, and we passed on to dress for dinner. As we were completing our toilet a knock at the door, and in came the same little saleswoman with: "Father, he say you unpack ivory very careful in England; he tie it in box with plenty little piece of cotton wool, you take out each little piece of cotton wool, very careful; Father, he put ivory in three box, one box, then other box; then other box, and, my husband, he say please buy the monkeys for two-fifty yen." and lo! and behold! the little carving lay in her hand! It was too much to refuse this indomitable little merchant, so she retired happy with her two-fifty yen to prove once more to her husband and father her pre-eminent ability as a saleswoman.

Travelling in Japan, at the time of our visit, was pleasant in day time, the main trains were punctual, and the fares cheap. Moreover, with the Japanese love of cleanliness, the carriages are invaded at the main station by men who wipe down the floors and steps to keep the dust in check. At night time the sleeping acccommodation is on the lines of that in the C.P.R. It is almost impossible to get a private compartment. On one occasion we succeeded. We did manage to squeeze into the bunks; but, in order to dress or undress, we were obliged to open the door, as otherwise there was no room for us to lift our arms.

A friend of ours who, after some hours of wakefulness

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and a splitting headache, managed to fall asleep in his bunk in a pullman, was awakened by being shaken by the arm, to find a pair of green spectacles looking at him, and an urgent appeal to rise and talk English: for behind the spectacles was an ardent student eager to practise that language. Learning a language from a phrase book without help frequently leads to mistakes; for another friend was accosted by a Japanese who wished to know the time. On being told, the inquirer raised his hat most politely and said: "Thank you, Sir, Madam, or Miss." The Japanese language is full of honorifics; for instance, you do not say 'Are you hungry?' but 'Is your honourable inside empty?' For 'good morning' you say 'honourably early.'

Space forbids meandering on about the beauties and novelties of Japan. Osaka with its monument to the horses killed in the Russian War—the first to be raised to these patient war workers (here we dined with Baron Sumitomo in almost regal state); the glories of Miyonoshita; shooting the rapids at Arasiyama, a not very dangerous adventure; the Inland Sea with its quaintly rigged junks; the Chrysanthemum Show; and, here I might remark, that the old fashion of hairdressing which took the place of a hat, led, at all events in 1913, to a disregard of Western ideas as to the fitness of the various forms of head covering. At the Royal Chrysanthemum Garden Party one of the highest of the aristocracy appeared in a tall hat which was three sizes too small for him, so, to keep it in place, he bored a hole each side through the brim and tied it on with a piece of string under his chin. Again, it was not uncommon to see a man dressed immaculately in a frock-coat, yet sporting a deer-stalking cap. But, after all, why these conventions of ours regarding head-dress?

Turning over my diary I came across a photograph of the fountain in the Hybia public gardens, which open space was close to our hotel in Tokyo. This was the scene of the ghastly tragedy which occurred during the great fire some years later, when some three thousand people, who had taken refuge there from the burning houses, were suffocated or burned to death.

I had the pleasure of entertaining many of the Admiralty

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officials, including Baron Saito, the First Lord of the Admiralty, at dinner. In their honour I had a long table made with a glass top, this I lighted from underneath with electric bulbs. On top of the glass was light-blue tissue paper, and over this a fine nainsook cloth. This gave a blue surface resembling water, and on top we laid out islands, junks, *torris* and other features which represented a small portion of the Inland Sea. The effect was novel and good; the sort of miniature outlay that appealed to my guests. In principle it was like the wonderful gardens of Baron Iwasaki, which are so beautifully laid out in miniature that a view that appears to extend for miles is, in reality, only some three or four hundred yards in length.

Having returned all the many civilities we had received, and paid my farewell official calls, with the pleasantest recollections we left for Pekin, where I was to meet the local agent of the Coventry Ordnance Works.

A night sea passage from Shimonoseki brought us to Fusan in Korea, and from there we went by train to Seoul. Korea is in many respects quite different from Japan. The one marked occupation of the male population appears to be walking; dressed in long white robes, with a miniature little top hat tied on with a cord under their chins, and huge coloured goggles, the men walk and walk at the rate of at least four miles an hour for miles on end without stopping.

The ladies, on the other hand, are more restful, but some indulge in the most varied colours in their attire. One lady we sat next to in a tram wore a yellow brocade coat with blue cuffs, brown wristlets, and a brown ribbon fastening the coat with a bow on the right side, the neck of the coat being edged with white, white silk petticoat, and eau-de-nil skirt, white stockings, mauve shoes with turned-up yellow toes and edges and the soles white. All was topped by a black head-dress with pink coral chains and magenta silk tassels.

From Seoul we went on to Mukden. On passing the frontier at Antung we had warm genial weather; in fact, I walked on the platform in my shirt-sleeves. At 11 p.m. we ran into Mukden in a blizzard. The platform seemed to be, and, I believe, was, a quarter of a mile long as we forced

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our way against snow and a bitterly cold gale which pierced fur coats and all other wraps. Fortunately, we had telegraphed to secure a room at the station hotel, since some less fortunate passengers had to drive three miles in the blizzard in open carriages, only to find very inferior accommodation in the town. We were glad to leave this icy spot for Pekin.

If the glories of Nikko were due to nature upsetting a paint-box, nature most certainly must have upset a browny-yellow wash over the country between Mukden and Pekin. This dull colour is everywhere at the time of the year when the crops have been garnered. The scenery is easy to describe. One huge yellow field, with an occasional yellow mud village, bare of all vegetation except a little coarse grass, and a few stunted trees planted to honour the graveyards. Graves were in evidence everywhere, dotted apparently promiscuously in the middle of fields, where they must be most inconvenient to the farmers when cultivating the land; mere conical mounds with rarely a stone to mark them. Such was the dreary landscape in winter; and in summer, after the crops have been cut, clouds of dust are added to the general desolation.

At Pekin my wife caught a bad cold and nearly developed pneumonia. So our stay, which I prolonged to ten days, was completely spoiled. Moreover, I found that from the armament point of view there was nothing doing. Just before leaving, Major Delmé Radcliffe, our agent, entertained us to lunch at the inn ' Fou shou tang,' which being interpreted is ' Long life and prosperity,' which was situated in a road which had the fascinating name of ' Gold Fish Street.' A nice combination this, ' the inn of long life and prosperity in Gold Fish Street.'

Chinese differs from Japanese native food in that it is just as palatable as the latter is impossible, but it is well not to inquire too closely into the genus of the animals before they become meat. One of our friends, when dining at a Chinese restaurant, was immensely struck by a particularly savoury curry. He called the boy (all Chinese waiters are called ' boy ') and said :

" Boy, tellee cookie he makee this piecee cully velly yum-yum."

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The boy bent down and whispered: "Dis cully not yum-yum, dis cully meaw-meaw!"

Little did we think what a sad ending to his life was in store for this man. He had married a German lady some year or so before, with whom he was still much in love. During the Great War he had a somewhat confidential post, and one evening on returning home he found a note from the lady saying that she had left for Germany, and he found that she had taken some of his confidential papers. Her letter ended: 'You fool! What do you think I married you for?' Surely this was straining secret service to its absolute limit. Within three months he was dead, completely broken up by this tragic blow.

But to return to our lunch party. The Chinese wife of Major Radcliffe's secretary made a splendid hostess, and, as is usual in the East, everything was the reverse of Western practice, for we commenced with dessert and ended with soup. First of all we ate roasted melon seeds, and drank tea, then ate fruit, after which a savoury of shrimps on toast was served on miniature plates—in fact, tiny plates were used throughout the meal—then slices of excellent cold ham. Of course, everything was eaten with chop-sticks. Chinese chop-sticks, by the way, differ from the Japanese weapons, being entirely round without any flat side. Moreover, they are cleansed after a meal and used until they wear out; whereas the Japanese wooden variety are supplied new for each meal.

After we had conjured with chop-sticks and ham we tackled eggs one hundred years old, embedded in aspic, the yolks being dark green and the whites pale yellow. Most of these so-called one-hundred-year-old eggs have been artificially treated with lime to accelerate their age. They are in reality quite good; all badness having long passed away. Then came an excellent soup of duck livers; this we negotiated with spoons. The menu then provided a novelty in the form of stewed sharks' fins, which were gelatinous and not particularly sapid. Then came bamboo shoots, rather like sliced hard Jerusalem artichokes. Then a noble fish appeared, well cooked, and not like those reputed to be served in Japan, where the tail of the fish is tied by a ribbon to its head, and the proof of the delicacy of the cook-

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ing is shown by the fish breaking this fine ligature on the first incision made by the server. We never saw a fish so served, so cannot vouch for the truth of the allegation. After this came chicken's gizzards cooked in batter, which were soft, and put to shame the hard gristly gizzards which in England are tucked under the wing of a roast chicken. Then we thought we had finished, but not a bit of it, the *pièce de résistance* had still to come in the form of a most excellent Pekin duck. This bird was luxuriously fat and excellently cooked; its breast had been cut into slices and each guest was provided with a number of half-baked dough purses on a separate plate, and also with a small basin of sauce. The technique of eating was to take a piece of the flesh in the chop-stick, dip it into the sauce, then place it in a purse, roll up the purse and eat it as a sandwich. It really was an excellent dish. After this we ended with rice and shrimps and fungus soup. During the meal we drank small cups of *samshu*, the native substitute for beer; it was mild but not thirst-quenching. After lunch our hostess soaked small towels in boiling water and squeezed them out. How her fingers stood the heat was a marvel! She then gave one to each guest, with which to wipe the fingers. The steaming hot towel was quite pleasant to touch, and the moisture it gave to the fingers evaporated almost immediately, so that a dry towel was unnecessary. A fat Chinaman, clad in partially clean attire, acted as 'boy,' and we missed the pretty slithery Japanese maids, who compensate so much for the shortcomings of a Japanese native meal.

I visited the Great Wall and the Ming Tombs, unfortunately alone, but as soon as my wife was fit to travel we left for Mukden and the trans-Siberian railway.

Siberia was cold and snow-covered. Between Manchuria, the frontier station, and Lake Baikal the thermometer was down to zero. The country was fairly sprinkled with birch trees, and, near Lake Baikal, undulating. The Ural Mountains were wooded and pretty, but the hills we passed were neither high nor in any way precipitous, resembling rather English park land. After the Urals, in Russia proper the country was flat and deadly dull, much like what we generally picture Siberia to be. In fact, I believe it is true that if it were not for the curvature of the earth, and if

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given unlimited vision, anyone standing on the Terrace of Windsor Castle could see the Ural Mountains, so flat is the intervening country. We were actually eleven consecutive nights in the train, but we found the long journey in no way irksome, being busy typing our diary and reading. The Russian trains burned wood for the greater part of the journey, so the carriages were clean. The travelling was smooth, since the speed was only between twenty and twenty-five miles an hour. But we were glad at last at Moscow to enjoy the luxury of a bath.

In Moscow we lunched with the British Consul-General; but on our way the sledge driver took us to the wrong house. There we were ushered into a large *salon* where about fifty guests were assembled. A man, evidently the host, advanced to meet us. We could not speak Russian, nor he French, nor English. So all we could do was to bow very low and beat a retreat; a manœuvre not easy to do in a dignified manner, down a long room with fifty astonished pairs of eyes focussed on our backs.

What a wonderfully interesting place Moscow was, and, I suppose, still is! I call it place, as the real interest centres in the Kremlin and the Place Rouge, those few acres of land which lie immediately outside its walls. The Tartars from the east, the Poles from the south, took turns in attacking and sacking the fortress; but, after each disaster, it rose again stronger and of more modern construction. The churches were multiplied and re-erected, the palace enlarged and embellished, and the stamp of its old military character remains as truly to-day, when its battlements are useless and its glory as a capital largely vanished, as in the old days when it was the proud city of a warring race.

It was here that Ivan IV lived and earned for himself the sobriquet of 'The Terrible.' The tower on the wall still remains where he was wont to sit and watch the games and dancing of the townfolk on the Place Rouge; and from that eyrie select any one of either sex who looked particularly happy, for execution. He then had but to turn his head and look down on the inner side of the wall and watch his victims being beaten to death.

The Place Rouge, as its name suggests, harboured the scaffold.

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Ivan IV was married seven times, killed his parents wilfully, and his son by accident, in a fit of temper. He had the church of the Sainte Trinité built as an *action de grace* for the taking of Kazan, and so pleased was he with the skill of the architect that he had his eyes put out, to prevent his designing a replica for another monarch.

From Moscow we passed on to St. Petersburg by what, I suppose, is the most direct track in the world. When the line was projected disputes arose as to which of the adjacent towns the railway should pass through. The matter was referred to the Tsar, who drew a line on the map with a ruler and said that was to be the route. The result was that the line avoided passing through *any* town.

I had been to St. Petersburg before, so there was little to do in the way of business, except to visit our agent, with whom we dined. This was in December 1913. I have often wondered what has become of all those at that party, and what was the end of an intriguing social drama of which we saw the commencement. How, I wonder, did they all fare in the dreadful days that were shortly to come?

On the night that we went to the opera, the house was glittering with uniforms, and the boxes filled with ladies wearing magnificent dresses and gorgeous jewels. It is possible that not a single one of those then present is alive to-day, and that every one of them had, within a year or two, to endure untold privation, and misery beyond description.

Well, thus ended my commercial mission, which was not destined to bear much fruit. Within eight months the Great War burst upon us, and any bread that I may have cast on the waters waxed mouldy before it had the chance of returning. The Coventry Ordnance was, however, then fully employed on our own war work, and Japanese requirements had to be satisfied by the armament works of neutral countries.

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PART II

War Work and After

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ADMIRAL SIR E. R. G. R. EVANS, K.C.B., D.S.O.

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INTRODUCTION TO PART II

By Admiral Sir Edward R. G. R. Evans, K.C.B., LL.D.

During my life, which has been packed with activity and adventure, I have met three men whose outstanding cleverness and genius have impressed me so deeply that they are nearly always in my thoughts. The three are: Winston Churchill, the late Captain R. F. Scott, and Admiral Sir Reginald Bacon.

When Admiral Bacon gave me the chance of writing this Introduction I felt a thrill of pride that this great sailor should have considered me worthy.

I first saw him when, as a very young Lieutenant, I was walking round the *Dreadnought* and suddenly sighted him and his departmental chiefs inspecting the hull of the ship. His name in our naval service was even then one to conjure with. Apart from his professional and scientific attainments, he had made an expedition on the West Coast of Africa to Benin, the City of Blood. I had met one or two midshipmen who had taken part in that dark journey, which took place over forty years ago, and their descriptions of the sanguinary sacrifices made at the order of Benin's evil king, of the stenches from the putrefied corpses in the City of Blood, and other horrors, are unforgettable.

Admiral Bacon took Benin in his stride like everything else he set his hands to—starting the Submarine Service, improving the Navy's gunnery, torpedoes, and construction, commanding the 15th Howitzer Battery which he himself had designed, and finally commanding the Dover Patrol on which truly the fate of our nation largely depended.

I served with the Dover 'Surf-deer,' commanding successively H.M.S. *Mohawk*, *Viking*, *Crusader*, and *Broke*, under his orders, and ultimately I had the very great honour of becoming Admiral Bacon's Chief of the Staff.

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I shall never forget the day he offered me this coveted appointment—when he sent for me I thought: 'Now what new piece of devilishness is he up to with his fertile brain and great imagination?' When he told me that Captain Humphrey Bowring, his Chief of the Staff, was leaving the Patrol to command a cruiser and get in his sea-time, and then offered me the chance of succeeding Bowring, you could have knocked me down with a feather. But once installed in my new position I found myself in clover, for my Chief was so clear and explicit that he never had to repeat his orders, and I never remember having to go back to him to ask whether he meant 'this or . . .'

He had a hawklike quality of picking out any defects or ambiguities in the orders I drafted for his signature; and I felt, throughout my service under my stern, but beloved Chief, that if there was any credit for success in the Patrol we, who served him, would get it, and if there was any blame or failure Admiral Bacon would gladly take it.

When the September, 1938, crisis came, I was Commander-in-Chief at the Nore, and what I had learned as one of Admiral Bacon's staff officers made it almost a simple matter to plan the organization and once again to establish the Dover Patrol. The twenty years that had elapsed seemed to have gone like a flash. Everything seemed to be dropping into place. Two of Admiral Bacon's most trusted officers were placed at my disposal by the First Sea Lord, Admiral Sir Roger Backhouse, and when an anxious Flag Officer, a little hot and bothered, came to Admiralty House to know what was being done, he was shown the organization completed, the plans made; and when he asked for the Commander-in-Chief he found me (thanks to what I had learned under Admiral Sir Reginald Bacon) chock-full of *joie-de-vivre*, enjoying a hard game of tennis.

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Chapter XII

DOVER

HAVING SAID FAREWELL TO ALL MY OLD FRIENDS AT Coventry, I left Southampton for France with the first of the 15-inch howitzers in January 1915, and disembarked at Boulogne. Our ascent of the hill in that town, on our way to St. Omer, was not without its excitements. The tractors were not sufficiently powerful to tow the trucks up the very steep incline; we therefore had to have recourse to the winding drums and wire ropes. To minimize accidents I had had constructed coigns—that is, hard wooden wedges with long handles—which could be placed in rear of the wheels to act as sprags, without danger to the men who were putting them into position. Everything went well with the exception of one truck loaded with platform plates. Half-way up the hill the wire broke and the coigns, through not being properly placed in position, failed to stop the truck, which commenced to career at high velocity down the hill, at the bottom of which was a dwelling-house. Just as I had visions of an innocent family being rudely disturbed by the advent of a four-wheel truck, and four tons of iron plates, in their breakfast room, the front wheels fortunately locked over and the truck capsized against the kerb. But for a few seconds it looked as if what might have been a serious disaster was inevitable.

The headquarters which had been assigned to me were a short distance outside the town of St. Omer. There was snow on the ground, and the house had been uninhabited for the whole winter, nor had the windows been opened nor the rooms aired. Never have I felt such a cold, clammy air as that which we met on entering the house. It took us three days to get the rooms reasonably dry, and at a livable temperature. We found that the place was owned by the secretary of the local hunt society, and mounted on a board

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over one of the fireplaces were the skulls and bones of the trophies of the chase—cats, weasels, foxes and several other varieties were represented.

A level spot near by was allotted to us for exercising the crew at mounting and dismounting the gun; our best time for assembling the carriage and mounting the gun, after the platform had been laid, was forty-seven minutes. After a few days we moved the first howitzer up to a spot which had been selected at the foot of Mont Kemmel.

A second howitzer soon arrived and this one we took to near Laventie, ready for the advance known now as the battle of Neuve Chapelle. The place where the first gun was installed was within the region under the command of General Sir Horace Smith-Dorrien, commanding the Second Division of the Expeditionary Force. He was anxious to receive first-hand information as to what the gun could do, so, on a certain day, he and his staff mounted Windmill Hill and selected the church tower at Waerschoot as a target. This had been fired at a good deal by one of the 6-inch guns mounted on railway trucks, without a direct hit being secured. It was about nine thousand yards away. The first shell fired demolished it completely, which was good evidence of the greater accuracy of a howitzer over a long-range gun. The howitzer was then laid on a farm-house a short distance within the German lines. This time the shell burst a few yards from the house and blew it into ruins. The General was satisfied as to the accuracy of the gun. After this, unfortunately, the gun was used for a purpose for which it had never been intended, namely, to shell the enemy's trenches, which in those days, at that spot, were very close to our own. The result was that the blow-back of the shell—carrying 212 lb. of H.E.—did as much damage to our men as it did to the enemy.

The second gun was in action during the battle of Neuve Chapelle. The attempt to break through ended in a complete failure.

Shortly after this I received a telegram calling me to the Admiralty. On arrival Mr. Churchill inquired how long it would take to ship one of the howitzers to the Dardanelles. I replied that if I telegraphed at once, within forty-eight hours I would have one gun back in St. Omer and on a train

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ready to leave for Marseilles, provided, always, that a train was in readiness. This pleased Mr. Churchill, so I left with the French Naval Attaché, on whom fell the duty of providing the train. I brought the gun back in the time promised. The evening before leaving for the Dardanelles, while at dinner, I received another telegram recalling me and offering me the command of the Dover Patrol. I therefore turned over the guns to Major Lumsden, who was my second in command. He was not so pleased as I expected he would have been, and it was not until afterwards I found out the reason for his seeming apathy. Lumsden was a very gallant officer, and was determined to work his way up to a command in the Army. So, not long after I had left, he left the howitzers, having obtained a staff appointment as G.S.O., 3rd class. From this he received the appointment of Lieut.-Colonel in command of a regiment at the front. He then earned the D.S.O. and bar and the V.C., and rose to the rank of Brigadier. The last time I saw him was while he was on leave, when he called on me at the Ministry of Munitions. Then, I am glad to say, I had the opportunity of congratulating him on the honours that his gallantry had earned for him. Shortly afterwards he returned to France. One night, when an attack on his trenches was threatened, he, as usual, was in the trenches, and, most unfortunately, was shot while standing looking over the firing parapet. His loss to the Army was summed up pithily in his Divisional General's assertion that his personality was worth as much as a whole regiment to the Division.

I left France next morning, and after reporting at the Admiralty went to Dover and took over the command of the Dover Patrol.

I have already written two books in which I hope I have made clear the wonderful work carried out by the officers and men of the Dover Patrol during 1915–17.[1] It was by their labours that traffic continued without interruption in spite of the many attempts made by the enemy to stop the ships of our Mercantile Marine from using the narrows of the English Channel. They were years of incessant work in all weathers, and often during most

[1] *The Dover Patrol*, 1915–17. *The Concise Story of the Dover Patrol.* Both published by Hutchinson.

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inclement seasons, and I have reason to believe that, in spite of the attempts at belittlement made by those who should have known better, their work has been appreciated by the greater part of the people of our country. It is therefore unnecessary, nor have I space, to recapitulate much of what I have written. I must be content in these chapters to deal with my personal connection with the work of the Patrol. It is, however, incumbent on me to preface those remarks by paying a tribute to the officers and men; for, on leaving Dover, I determined never to write of the doings of the Patrol without stressing the valuable work done by all who served under my command, and to whom, primarily, the credit for our success was due.

It may seem invidious to mention a few names when I should pay nominal tribute to many, but the splendid work of Captain Humphrey Bowring and of Captain E. R. G. R. Evans, who both in turn acted as my Chief of the Staff, is worthy of special record.

When I suffered in 1917 the great loss of the assistance of Captain Bowring, through his leaving to command a cruiser, I had no hesitation in offering the post of Chief of my Staff to Captain E. R. Evans,[1] who, in an uncommon degree, combined the virtue of efficiency as an officer with an almost super-human virility, characteristics which do not appear to have waned with advancing years, increased rank, and heavy responsibilities.

I must also record the excellent work and assistance afforded me by my secretary, Fleet-Paymaster Walter Gask.[2] To these officers I owe my eternal gratitude.

Nor can I fail to mention the good work done not only by the officers and men of the Royal Navy who manned our destroyers and monitors, but also that of the fishermen crews of the trawlers and drifters—seamen in the best interpretation of the term. After a raid in which our drifters were exposed to the fury of the German destroyers, an evil whisper went round that the drifter crews feared going out on patrol. This libel was quickly scotched by the men sending me a message through their Captain, the late Captain Frederick Bird, that, so far from their having cold

[1] Now Admiral Sir Edward R. G. R. Evans, K.C.B., D.S.O., LL.D.
[2] Now Paymaster Rear-Admiral Walter Gask, C.B.

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feet, they were ready to lay their nets and watch them close off the port of Zeebrugge if I should wish them to do so.

And the trawlers, fine seamen, but perhaps not what a Sussex yokel would call 'schollards.' One day the Skipper of one of the trawlers signalled that he had a case of smallpox on board his vessel, which gave the Medical Officer of Health a nasty jar until he discovered that he had only to deal with a case of rheumatism! The Skipper explained that he had reported smallpox as he was uncertain how 'rheumatism' should be spelt.

It is impossible to over-estimate the debt owed by our shipping to these gallant seamen.

I am glad that the stolid grit of our merchant seaman has of late years received recognition by H. M. the King having graciously consented to become the titular head of the Merchant Navy. I saw a good many cases of pluck—but none greater than that of Captain W. Lamb of the *S. D. Lambert*, a ship mined off Dover. On inquiring I extracted from him the information that it was the third time he had been mined, that he had three sons in the trenches, and he was going north to get another ship, 'as father had got to do his bit too.'

Magnificent fellows these.

I had finished writing these reminiscences before the Second Great War broke out. Consequently there was a certain amount in the two chapters on Dover which might conceivably have been of use to the enemy—I say *conceivably*, because nearly all had been already published in the two books I had written on the Dover Patrol. There was *in reality* nothing about the work done at Dover which could be looked on as confidential, since everything which was done in that command was at the time divulged to the naval attachés or the representatives of the many nations which were then our Allies—the United States, Japan, Italy, France, etc. My book, *The Dover Patrol*, has been translated into French, German, Spanish, and probably other languages. However, I have pruned the chapters considerably and now they are quite colourless and harmless. Moreover, the difference between the two wars on the sea is great in that, so far, the Belgian coast has not become

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German territory, as was the case in the previous war, so that the problem of the Straits of Dover is immensely simplified for us and rendered correspondingly more complex for the German High Command. The major part of our work during 1915–1917 has, therefore, no bearing on the problems of the present War.

I must now ask anyone who objects to egotism not to read this chapter, for it is mainly an exposition of the reasons why I did various things while I was in command at Dover. It is an intimate opening of my thoughts for the benefit of anyone who may, in future years, have to administer a command of the complexity of the Dover Patrol. It is not written in any way to extol my work. It is merely a record of what I thought and what I did.

Criticisms of Admiralty procedure there will be, but these I consider to be most necessary in order to show up the pernicious system that crept into the Admiralty, after Sir Eric Geddes became First Lord, of appointing committees to sit in London which had the power, under the sanction of some officer other than the First Sea Lord, of usurping the executive functions, and interfering with the details and disposition of ships in the sea-going commands. I have refrained from criticism of the conduct of affairs in the Dover area after I gave up the command, though it might have been useful to emphasize the value of experience, and how greatly success in war-time depends on that unobtrusive quality.

Often, before the War, I had thought how intensely interesting it would be if the admirals who commanded in the old wars had placed on record the pros and cons which passed through their minds when preparing their operations and dispositions.

Being a convinced determinist, it is impossible for me to be conceited, although I shall, in this chapter, be decidedly egotistical.

To a determinist, egotism and conceit are very different characteristics; although, to a believer in free will, they are so closely allied that they might almost be considered to be identical. However, this is not a philosophical screed on humanism, but a practical analysis of the operations of war: so to business.

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Looking out to sea from Dover it was difficult to appreciate that we were at war; yet the knowledge that such was the case was bound to raise in me a conflict of feelings when, for the first time, I found myself in command of this complicated organism. The problem of the Dover command was, as a whole, entirely new to me; although each of the various details with which I had to deal was familiar, since they had, one and all, occupied my mind for many years. The submarine problem was one with which I was particularly conversant; for I had started the Submarine Service in the Navy, and had then been forced to study the problems of submarine warfare from the opposing angles of attack and defence. I knew the weak and the strong points of submarines, what were the methods available to counter their attack, and what were the chances of so doing. The gunnery problems were those with which I had been fully conversant when D.N.O. Submarine mining had been a commonplace in the torpedo branch of the Navy. But, over and beyond past and present knowledge, there lay before me the future, and the problem of how much we could develop defence under the stimulus of war, and to what extent and in what direction the Germans would develop their lines of attack under the urge of necessity. For, let me emphasize the fact that it became at once apparent to me that our role at Dover was primarily one of defence, but that every reasonable offensive action should be undertaken that would strengthen our defence of the Channel and its shipping.

I was confident that, in the end, we would always be able to defeat attack; but the great doubt arose whether we should be in time; whether we should be able rapidly to counter new methods of attack before vast damage had been done. The only thing to do was to study and think over present conditions and future possibilities, and try to forestall future developments, for thought, and thought alone, could ensure preparedness and bring success.

One vow only I registered, and that was that I would not undertake any operations with a view to my personal prestige or advantage, by bringing my name into the limelight of publicity, and that the inception of any operation would be solely determined by the answer to the question

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as to whether it did, or did not, bring advantage in the general furtherance of the War.

In fact the longer I was in command the more I became impressed with the necessity of carrying out only those operations which were of service to the Patrol and the country generally, and sternly rejecting all those which were unnecessary, or hazarded unduly important units of the meagre force I had at my command, however tempting such adventures might appear to be.

Later on, when a virulent Press campaign was being waged against me, I was warned by one whose opinion I greatly valued that a certain section of the Press, and also some Members of Parliament, were becoming restive at the apparent inactivity of the forces at Dover; and he suggested that in order to allay their disquiet, I should undertake some operations on the Belgian coast. There was at the moment nothing of that nature that could usefully be done. I was doing the important work of the Patrol thoroughly in passing troop and merchant ships with comparative immunity, so I refused to waste life mainly to satisfy a public craving for sensation, and to pander to a Press campaign. I was right to do so; it would not have been difficult to have advertised myself at the cost of the lives of others, but that was not the purpose for which I had been appointed to my command.

I was convinced that economy in casualties among our seamen was not incompatible with success in operations. There were numerous examples in previous wars, and heaven knows there were to be in the Great War, of how want of forethought and inadequate preparation had wasted life; while, on the other hand, forethought and prevision had lessened casualties. I had noticed how, in the past, the grandeur of an operation had often been judged by the number of killed and wounded, while an economy in casualties had led to an operation being counted a poor affair by the public; for, to the man in the street, a high casualty list is apt to magnify the importance of an operation. But, in spite of this, the main endeavour of an Admiral or general should be to achieve success with a minimum loss of life.

Let me further here remark on the insanity of under-

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taking any operation in war that is not of importance, and which will not if successful yield material result. How often do we not hear the remark: 'General So-and-so, he's a good man. He keeps the enemy busy.' This pundit does not realize that General So-and-so is merely teaching the enemy, by showing him his weak points, and helping him to become more formidable when the great day comes. We, in peace-time, carry out manœuvres with the Fleets in order to test our theories of strategy or methods of attack and defence. Admiral So-and-so would be a fool to afford the enemy the same instruction in war-time. When we fight in war-time we should not put on gloves to spar with the enemy and teach him how to overcome our offence and defence. War-time is the time for bare knuckles and knock-out blows.

The more I came to study the Dover problem the more complicated I found it, and the more I appreciated how inadequate were the forces under my command to carry out the duties assigned to them. However, I knew well what were the fundamental strategic requirements in a war with Germany: and that the whole of our success at sea pivoted on the ability of our Grand Fleet to hold the German High Sea Fleet inactive, or to defeat it in a general action. All other theatres of our sea warfare, however important each, or all, might seem, were as nothing compared to the northern waters where the main fleets of the two countries lay *vis-à-vis* across the North Sea. If, then, the Admiralty could not increase the vessels under my command without robbing the Grand Fleet, it was up to me to rest content, and to scheme to make the force that I had fulfil the functions demanded of them. The one bright spot in a rather dismal outlook was the fact that I had most capable officers under me as the heads of the different services: Captain Bowring was in command of the Drifter Patrol, Captain Vansittart Howard of the Trawlers, Captain Bird, Captain Charles Johnson, commanding the *Attentive* and also the destroyers; Captain Arnot Henderson and Engineer Captain Parsons of the Dockyard. All were excellent, and the longer I served with them the more I came to depend on them, and value their assistance.

On my taking over command my predecessor, Rear-

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Admiral the Hon. Horace Hood, remained for forty-eight hours and showed me over the whole Patrol, explaining his dispositions and the reasons which had led to their adoption.

The general scheme for the defence of the Straits which he had instituted was in every way excellent, as can well be imagined by all who knew him. Little remained for me to do immediately after relieving him, except to study the general situation and think over all our problems from the German point of view—problems which loomed large at the moment, and were fraught with deadly possibilities in the future. It is criminally foolish for an Admiral to alter the careful dispositions of his predecessor until experience of the command has forced him to do so; such an action can only arise from arrogance or conceit.

To those in high command the conduct of a war should be largely a business proposition. Every Admiral should decide for himself (or have decided for him by the Admiralty) what are, and what are not, the important functions of his command. The Commander-in-Chief of the Grand Fleet was mainly preoccupied in keeping his Fleet instructed, exercised, and fit, ready to meet the German High Sea Fleet the moment that it put to sea. He had other pre-occupations, but these were secondary to that of rendering the German Battle Fleet impotent. To have risked the loss of important units for subsidiary purposes would have been criminal.

The Commodore at Harwich had mainly the duty of engaging the German light forces should they put to sea. The Admirals on the distant Stations had, in the first instance, to protect the troops and transports when on the high seas. After these transport duties had come to an end, they could turn to the destruction of the commerce raiders and the protection of traffic. To have hunted elusive commerce raiders and left the troop transports open to attack would have been foolish in the extreme.

At Dover the main function of the Patrol was to keep the Narrows open for traffic; safeguarding troop transports on their passage across the Channel; protecting the merchant vessels on their passage up the Straits; the stoppage, so far as was possible, of submarines passing through the Straits; then, subsidiary to all of these, came the destruction of the

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ADMIRAL HUMPHREY BOWRING, C.B.

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submarine bases on the Belgian coast, and affording assistance to the left flank of the Allied Army as occasion might offer.

The relative importance of these functions was a question of no practical importance since all these duties were to a great extent independent of each other. In other words the protection of traffic, protection of transport, stoppage of submarines, all necessary to sustain our commerce, each and all required the services of different vessels and the adoption of different methods.

It is needless to dwell on the importance of maintaining the cross-Channel transport service of the Expeditionary Force. Very little thought showed me that a great change was in progress which already was beginning to threaten the strategic position at Dover. Belgium was becoming a province of Germany. Ostend and Zeebrugge would shortly become thoroughly equipped as submarine bases, and would add greatly to the danger attending the cross-Channel traffic. I soon came to the conclusion that it was no longer safe to run the cross-Channel transport of troops at night-time, for two reasons :

First, a disaster at night, such as the sinking of a transport by a submarine or destroyer, would probably involve the loss of hundreds of lives, whereas the lives of the majority of the troops might well be saved if a similar accident occurred in the day-time.

Secondly, it was an easy matter to keep the eastern entrance of the Straits under observation in daylight and to ensure that ample warning would be given of the approach of an attack on the transport-line by destroyers or other surface vessels ; whereas in the dark such observation was practically impossible and warning would be non-existent.

The experience I had gained in the several torpedo craft manœuvres in which I had taken part, as well as my experience in command of the Submarine Service, convinced me that an attack by destroyers at night was far more dangerous, and far more difficult to guard against, than an attack carried out in daytime by submarines against the transports, provided always that they were escorted by destroyers. Subsequent events justified this assumption ; since, during the three years of transport sailings (some two

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thousand odd, each of three ships), no single one was ever attacked by a submarine, whereas the transport line was raided at least twice by German destroyers; once on the night of 26–27 October 1916, when one empty transport was sunk, and again on the night of 23–24 March 1917, when no transports were encountered by the enemy vessels. Whether a raid on the line was again attempted on the night of 20–21 April I cannot say, but the enemy's destroyers were certainly in the vicinity of that route during the raid that took place on the Straits of Dover; so it is reasonable to assume that an attack had been planned on transports which they had hoped to find, but which were not there.

It is appalling to think that had the transports been running on any of those nights, some three thousand troops might have been drowned; for little chance of rescue existed on a pitch-dark night, during the short time that was available after the explosion of the torpedo against the frail hull of the transport, and before the strong Channel tides swept the struggling mass of humanity away from all possibility of rescue.

Let me here emphasize the fact that in strategy and tactics, and indeed in most happenings at sea, time and distance are the two most important factors; that a vessel takes a definite time to steam a definite distance is an inexorable fact. An Admiral therefore should gauge all eventualities by a time and distance scale. Indisciplined imagination, a defect which frequently gives rise to lay criticism, is apt to jump all such fences, and visualize movements without due regard to the limitations of speed, or the delays consequent on mileage. For instance, if the transports had been torpedoed it would have taken any rescue vessels at least one hour to have reached the scene of the disaster; for the time taken in receiving information of the accident, of communicating with the vessels, of their leaving harbour, of arriving near the place and discovering the exact locality, have all to be taken into account. It requires but little knowledge of sea disasters to appreciate that we should have been extremely lucky if ten men had been saved out of the three thousand.

I had very much in my mind the experience I had gained by the loss of the *Utopia* at Gibraltar. This disaster occurred

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in the middle of the Mediterranean Fleet; with her upper works above water and with some thirty boats lying off the doomed ship; yet, in the dark, only about four hundred persons out of the nine hundred that were on board were saved; although had it been daylight we should have saved at least double that number.

Raids by surface vessels at night, especially high-speed ships like destroyers, are much more difficult to frustrate than attack by aeroplanes and bombers, since the destroyers are silent sleuths giving no warning of their advent until the blow is struck. As a gillie, it may be remembered, remarked to a bad shot that there was a "worrld of space round a grouse," and the destroyer Captains and I found that there was an ocean of pitch-black space round a raiding flotilla. All that I could do was, first, to dispose of all the vessels that were available in places where they could defend vital interests, and trust to luck favouring them to come across the enemy's vessels. Secondly, to avoid having the transports at sea between one hour after sunset and one hour before sunrise.

In an offensive the proper place for the Admiral is at sea with his vessels, but in preparing to deal with an attack on the Straits of Dover, when the enemy vessels might be first reported anywhere in the area, my proper place was in my office at the centre of the telephone and signal service. In a former description of the work at Dover I wrote that it might perhaps have been an advantage if some civilian critics could have sat in the office of the Vice-Admiral on a pitch-dark night, with the lights out and the windows open, waiting for the sound of gunfire. In conversation they would have learned how small was the number of the protecting vessels; the various places where the enemy might turn up; the exact position of each defending vessel every quarter of an hour; the places of vital importance the Admiral had to defend, and those places which, perforce, had to be left undefended, and the chances against the enemy being brought to action. They would learn that most probably the enemy vessels would, on arrival, merely fire wildly into Kent without inflicting material damage, and run away as fast as they could, metaphorically, with their tails between their legs, in a manner reminiscent of the Kid

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in Charlie Chaplin's famous films. The newspapers next morning would raise a howl and ask what the Admiral at Dover was doing. To which query no satisfactory answer could be given, because to do so would expose the inadequacy of the force at Dover, and would have supplied the enemy with a most valuable piece of information. Although the Admiral would probably have laughed and said he did not care a damn for the Press and Parliament, yet the prospect of the next day's comments did not help him to bear his heavy load of responsibility; for he well knew they could but undermine his reputation with the Navy and the country generally.

Then, if no raid had taken place, at 2 a.m. in summer or 3 a.m. in winter the Admiral would shut his windows and go to bed. But on dark moonless nights, when the tides and weather favoured raids, such a vigil was invariably kept.

The next alteration, which I became convinced had become necessary, was to change the position of the traffic-line that ran up and down the Dover portion of the English Channel. The existing arrangement was that all east-going merchant vessels were ordered to keep to the *middle* of the English Channel until approaching Folkestone, and then to keep inshore, in order to leave the centre area of the Channel clear of traffic for the operations of the drifters, which were drifting nets to catch the periscopes of submarines. This arrangement was sound, provided that the drifters could be relied on to stop submarines passing through the Narrows, and so safeguard the ships spread out on the waters of the Channel. This, however, was soon shown to be a physical impossibility; for the Germans had tumbled to our use of drift-nets, and the submarines gave a wide berth to our drifters.

When I came to examine the matter critically from the all-important angle of using the forces I had with the best possible efficiency, I saw that the existing practice was most uneconomical. I had a huge sea of four thousand square miles to protect with a force totally inadequate to cope with so large an area. If, however, I was able to confine the traffic to a strip of water near the coast, two great advantages would be gained; I would have reduced the area of water I had to defend to four hundred square miles instead of

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four thousand, and one flank of the traffic route would be automatically defended by the shoal water off the coast of England. I should then be able to dispose all my trawlers and other protecting vessels on one side only of the traffic-line. The limited number of vessels I had at my command could then provide a reasonable defence. After a short argument the Admiralty came round to my point of view.

The justification of this method lies in the fact that in the three years 1915, 1916, 1917, out of eighty-eight thousand merchant vessels passing through the waters which lie between Beachy Head and the Downs, only five were torpedoed (and it is doubtful if one of these had not been injured by a mine), and one only was lost by gun-fire. Yet the distance from Dover to the headquarters of the enemy at Ostend was only seventy miles.[1] The value of the system was also clearly shown when the Germans started minelaying from submarines. I then had only certain defined lanes to sweep every morning instead of a large and indefinite area. It has been argued that the system was advantageous to the Germans, since they could concentrate their minelaying on the trade routes. This I did not mind, since every day the routes were swept, therefore the minefields which they did lay were found and destroyed and rendered practically innocuous. Out of the eighty-eight thousand ships that passed the Narrows during my period of command at Dover, fifty only were mined, or approximately ·05 per cent. During this time twelve hundred mines were located and swept up. That the figures show the magnificent work done by the trawlers and mine-sweepers is beyond dispute, but they also confirm the soundness of the traffic system and regulations in vogue. Perhaps the portion of the traffic regulation which occupied most of my attention was that which aimed at reducing the fortuitous stoppages of the merchant fleet to a minimum when minefields were discovered. Fifty merchant ships delayed for six hours would mean an equivalent loss to the country of the services of one ship for ten days. I therefore arranged the procedure to be adopted on the discovery of a minefield, so that the traffic was automatically diverted and

[1] Fortunately for us, in the second great war the Elbe is roughly eight times this distance from Dover.

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consequently no actual stoppage of the traffic took place. The saving of tonnage in the course of a year was therefore considerable. It would have been far simpler to hold up the traffic until the minefield had been cleared, which was the orthodox Admiralty procedure. But I preferred to adopt the rather more laborious and somewhat anxious method, by which a greater total transport of tonnage was given to the nation.

If a man in command has thought out all the implications of a procedure, has turned over the various strings of control to competent hands, and has confidence in himself, he is able to act in a way which, although in reality it is perfectly safe, may seem to others to involve incurring unjustifiable risks.

Let me here point out how very slender were the forces allowed to me compared with the vast interests which we had to defend. It must be appreciated that from a hundred to a hundred and twenty merchant vessels passed Dover daily; this represented a large tonnage which was not only worth a huge sum of money, but the ships themselves were difficult to replace. To protect this shipping I had only the 6th Flotilla of destroyers, consisting of twelve of the tribal class, of which six only carried two 4-inch guns, the other six mounting 3-inch twelve-pounders; and twelve 'thirty-knotters,' a type of destroyer which had been condemned for the scrap-heap before the War started. They had a speed of about twenty-three knots instead of their nominal thirty knots, and carried twelve-pounder guns.

The 6th Flotilla did most excellent service throughout the War, so also within their limited powers did the thirty-knotters. But the majority of these vessels were shockingly under-armed compared with the more modern German destroyers which frequented Zeebrugge and Ostend. The monitors were too slow to deal with a destroyer raid; moreover, at that time they had no secondary armament, and therefore could not assist in the protection of traffic. The trawlers were mainly useful for mine-sweeping and to frighten submarines. The drifters had no armament beyond a rifle or two.

Now let us turn to the methods adopted to deal with the submarine danger.

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DOVER STRAITS AT NIGHT-TIME
Showing areas visible to patrol vessels.

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It must be remembered that none of the refined methods existing in 1939 for the detection of submarines had been invented in 1917.

Although the Admiralty were obsessed with the idea that submarines could be stopped from passing through the Straits of Dover, I very soon became convinced that such passage could not be denied to them by the means I had at my disposal; and that it was a matter of pure good luck if occasionally an enemy submarine might be sunk. In the day-time a submarine could dive before reaching the Narrows and remain submerged, and therefore unseen and unsuspected, until it had passed beyond our area. If you cannot see or hear a thing it is very difficult to detect its presence, and still more difficult to destroy it.

Surely, if our submarines could force the passage of the Dardanelles in the teeth of a three-knot current, where the Narrows were only one and a half miles wide, and flanked with batteries, how much more easily could the German boats pass the Straits of Dover, when carrying a two- to three-knot tide with them, and where the width of the narrowest part was twenty miles, making shore batteries and shore observation perfectly useless.

On a dark night submarines could pass while on the surface; and on moonlight nights they could pass semi-submerged. In this condition they would be visible only for a distance of about half a mile; moreover, our patrol vessels were far more visible to the submarines than the submarines were to them. The enemy submarines therefore would be given ample warning to dive before they could be sighted by our patrol vessels. It is not difficult to see, therefore, that it was a fairly simple matter for submarines to pass through the Dover area in perfect safety.

When I took over the command from Admiral Hood I found that, generally speaking, he had arranged that one-half of the Tribal destroyers should rest in harbour while the other half were out on patrol; but that all the destroyers which were resting, with the exception of one which would be undergoing a short overhaul, were to be ready with steam up, instantly to leave harbour to hunt any periscope that might be sighted. This was a most excellent arrangement, and one to which I adhered for the whole period of

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my command. I always ascribe the immunity of all the vessels that passed through the Dover area from attack by submarines to the fact that every submarine which was sighted was dogged and chased by our destroyers for at least two hours after she had dived and become invisible. The noise of the explosion of the depth charges, and the racing of the propellers of the destroyer overhead, were anything but welcome sounds to the crew of a submarine stealing away below the surface, or lying doggo on the bottom. The Dover area was not a healthy spot for the enemy's submarine operations; it was no place for them to loiter in. This constant work was very severe on the officers and men of the destroyers and also on the vessels themselves. At one time I had only a single destroyer carrying a 4-inch gun at Dover, and I was forced to make bogus wireless signals to ships that were not present in order to hide our weakness from the enemy. In fact, the work entailed by this measure was almost too hard, but it was one that I was forced to adopt. In war-time a whole lifetime of energy must, if necessary, be expended. This spirit of self-sacrifice was dominant in the Patrol and was fully appreciated and acted up to by the personnel. When I pointed out our deficiency in destroyers to the Admiralty, they told me that they could not possibly spare any more for the Dover Command. The question therefore arose, how was I to dispose my vessels, so as adequately to protect the whole of the interests in the Dover area?

After much thought I came to the conclusion that the only thing I could do was to hide our weakness by taking the offensive and blockading the Belgian coast. This would enable me to make efficient use of the monitors, since they would be most valuable when used on the patrol line, whereas they were useless for work in the Channel. I thoroughly appreciated that no measures that I could take would ensure a thorough blockade. The neutral waters off the Dutch coast provided a free channel for the use of the German submarines. But I could lengthen their route; and, particularly, I banked on an offensive blockade deceiving the enemy as to our real strength. I gambled on the assumption that they would never believe that I was so mad as to put all my available force off their coasts, while leaving

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the Straits bare of any supports on which I could fall back in case of attack. I however took the precaution of obtaining the consent of the Admiralty to my borrowing the Commodore (T.) from Harwich, with his splendid command of light cruisers and destroyers, to parade for a forenoon up and down the newly-laid barrage, so as to impress the German High Command at Ostend; for the Admiral there had no means of ascertaining that those vessels had been borrowed and were not stationed permanently at Dover.

Before this blockade of 1916 proved to be a success, the Navy had looked askance at blockades. In fact, it had become an axiom of naval strategy that blockade had become impossible. Destroyers and submarines were credited with the power of sinking the blockading vessels; and, without doubt, it was, generally speaking, practically impossible to maintain an efficient day and night blockade off an enemy's defended harbour. But I had a special problem to solve, one which I appreciated differed essentially from preconceived conditions, and to which the usual arguments did not apply. I had among other things the advantage of having at my disposal the monitors, which were light-draught vessels and could therefore work safely in shallow water. Further, through the experimental work carried out with net mines under Admiralty ægis, I was able to lay explosive nets the whole length of the patrol line. These made the inshore side of the patrol safe from submarine attack. Two lines of ordinary ship mines laid at two depths (these embodied the original idea, on a small scale, of the Folkestone barrage) defended the nets from any attack made by destroyers from the shore side of the patrol line. Our destroyers defended the sea side of the patrol from submarines; and our monitors defended the destroyers from the attack of the larger, and better armed, destroyers of the enemy. I had therefore a compensating scheme whereby mutual protection was provided by each item of the patrol to the other.

Again, to defend the line against attack by cruisers from seaward (for such an attack was really one of great danger to the patrol vessels), I laid a minefield in the deep channel approaches. This was purposely laid in full sight of the

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enemy's seaplanes. These we heard counting, and reporting by wireless, the positions of the mines as they were dropped. Neither the seaplanes, nor the German Admiral, knew, however, that the mines were laid too deep to be dangerous to ships, as I wanted to keep the Channel open for our own heavy-draught vessels. They naturally concluded that these channels had been effectively blocked.

Owing to the various items of the scheme the patrol was protected, and maintained, without the loss of a single vessel for two whole summers. I think I may therefore justly claim that all contingencies had been foreseen and provided for.

I always look back with satisfaction on the initiation and maintenance of this patrol; and it is with some degree of pride that I recall the fact that Lord Jellicoe (who cannot be accused of awarding his approbation indiscriminately) in his preface to the *Concise Story of the Dover Patrol* did not hesitate to characterize the inception of the patrol as the 'climax of audacity.' I had received plenty of forecasts from my officers that it would be impossible to maintain the patrol, and that wholesale disaster would result; but I was, nevertheless, convinced that it could be done, and done safely it was.

Because it was successful, because the possible forms of attack had been foreseen, and the patrol was maintained week after week, immune from serious attack, it therefore came to be looked upon as an everyday sort of affair. If less foresight had been used a serious attack might well have developed, and disaster might have ensued. It would then have been stigmatized as a hare-brained and foolish scheme which courted disaster. If merely a severe action had resulted, and a considerable loss of life had occurred, while, in the end, the enemy had been beaten off, the scheme would probably have tickled the popular palate and would not only have been looked on as a gallant undertaking, but might perhaps have received a larger meed of praise than that to which it was entitled.

It should be, however, to the philosophical naval officer an additional example of how meticulous foresight robs an undertaking of the halo with which, otherwise, it might well have been invested.

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After instituting the Belgian Coast Patrol, and before mines for the wall minefield became available, I tried to devise a scheme for stopping, or at all events impeding, the passage of submarines up and down the Channel. I knew it was impossible to stop submarines passing the Straits if they desired to do so; but it was my business at all events to make the attempt as uncomfortable as possible for them. I therefore determined to place a net barrage across the Straits from the Goodwin Sands to the Ruytingen buoy, that lies south-eastwards towards Gravelines.

Early in 1915 the Admiralty had given approval for the construction of a boom to close the Narrows between Folkestone and Gris Nez. It was a fine attempt, but the strong gales and heavy seas played 'old Harry' with the heavy floats and large hawsers: above all, the strain on the chain cables, due to the strong tides pressing against the floats and nets, was enormous, and produced unforeseen erosion in the bolts of the shackles as the sea lifted and lowered the whole structure. I have seen a 3-inch bolt of a shackle that had been chawed half through in a single gale. It would be difficult for anyone, who had not watched the behaviour of the boom in heavy weather, to picture the strains and erosion to which the component parts of the structure were submitted. Floats that broke away were picked up in the North Sea and on the French coast near Dunkirk. Three times I urged the very capable officer in charge of the boom[1] to make fresh efforts to achieve success; but, in the end, I was forced to report that success was impossible.

Before going to Dover I had myself worked out a scheme for a barrage which seemed to me to offer a fair prospect of success. But the behaviour of the Admiralty boom, in one single gale, was sufficient to convince me of the impossibility of the structure I had designed lasting for a single winter month in the English Channel.

So by the end of 1915 I had come to the conclusion that the only feasible means of stopping the Narrows to submarine traffic was by mooring a wall of mines across the Channel. Mines have to be moored at a considerable distance apart in order to prevent the explosion of one mine

[1] Commander G. B. Eldridge, R.N.

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detonating its neighbours ; so, not only had the mines to be moored at different depths in order to form a wall, but several lines had to be moored at each depth so as to increase the chance of a submarine striking a mine.

In order to lay a minefield that would theoretically have stopped a submarine passing through, some twenty-six to twenty-eight thousand mines would have been required. Such a number was quite unobtainable. So I devised a minefield requiring only four thousand mines, which allowed for two lines of mines at each of five depths. The minefield so formed gave an even chance of a submarine being destroyed during three trips backwards and forwards. This scheme I proposed to Sir Henry Jackson, who was at that time First Sea Lord. At the same time I suggested that a similar wall should be moored across the North Sea towards the Norwegian coast. He turned up a chart of the North Sea and said : " How about the neutral waters off the Scandinavian coast ? " I replied that, of course, they would provide a channel for the submarines, but that if they used this passage we should have restricted the submarines to a small and definite area. Moreover, they would not know the exact position of our minefield, nor even for certain that one had been laid.

Although agreeing generally with the schemes, for he was a torpedo officer of great experience, he regretfully pointed out that we had no mines suitable for the purpose, nor was there any chance of our having anything like enough for either scheme for some considerable time to come. The matter had therefore to be shelved until such a time as a sufficient number of the new pattern mines could be manufactured to carry out the proposal, which eventually proved to be in the late autumn of 1917.

It is interesting here to recall that in 1900 I went, with Sir Henry Jackson, to Genoa to visit the firm of Ansaldo, in order to inspect a new kind of blockade mine which had been invented by Commander Elia. We were greatly impressed, and reported that the mine was not only useful as a blockade mine, but might also be employed as a preliminary to, or during, a fleet action.

In fact, the words we used were : ' A new weapon has been invented for the naval armoury.' I was interested to

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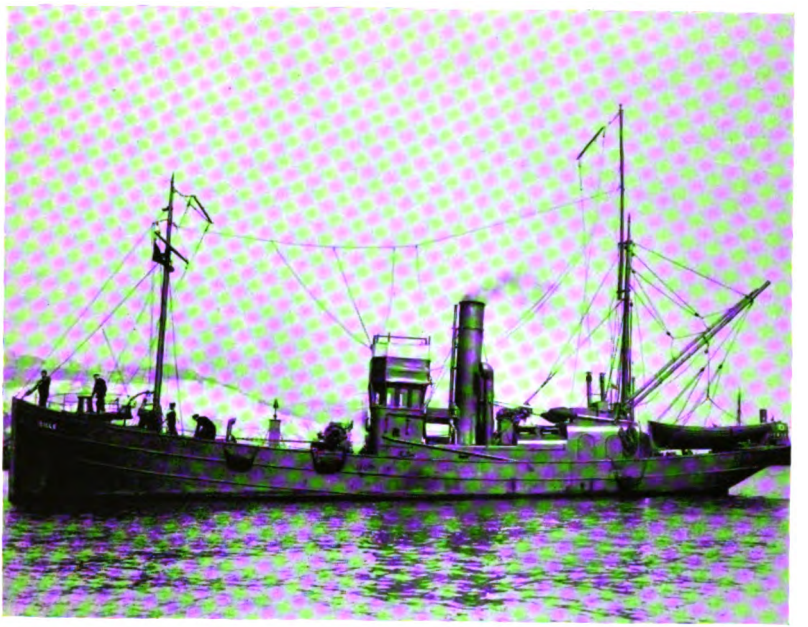
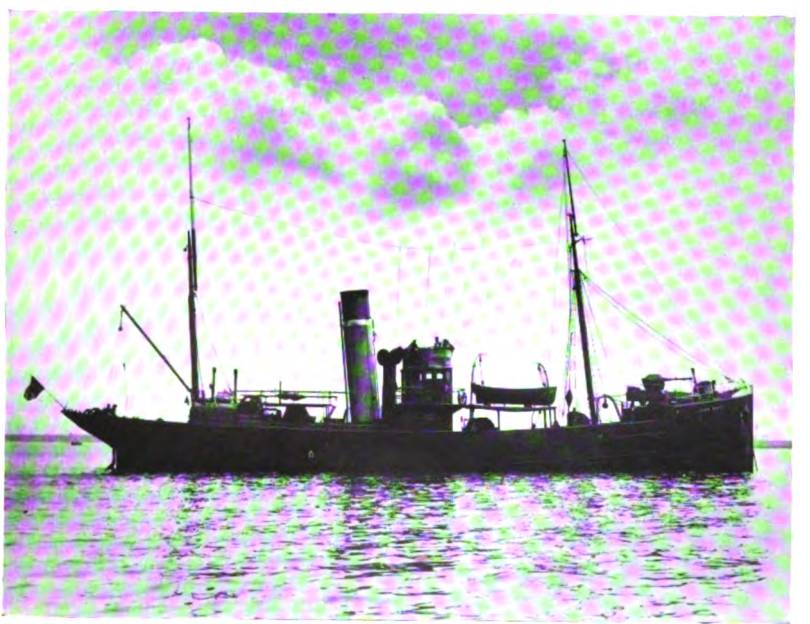


A MINE-SWEEPING TRAWLER



A DRIFTER

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hear a few months ago from Conte Elia (as he is now) that he still has the chart on which I drew a line across the North Sea showing where a minefield should be laid in case of a war in that area. But enough for the present about the mine barrage, with which I will deal fully later on.

As this mine barrage could not be laid owing to shortage of mines, I had, for the time, to fall back on my scheme for laying the Goodwins-Ruytingen barrage. In view of the experience gained with the Admiralty Folkestone barrage, I made this obstruction of as light a construction as possible, and with the fewest number of floating supports. In fact, it was a barrage of explosive nets only, supported by mooring buoys at suitable intervals. This barrage I had perforce to mark with light buoys for the safety of our night patrols. It was by no means an ideal obstruction, but it was better than nothing. I anticipated that the Germans would use the light buoys as an aid to navigation, so on occasions I substituted a submarine for a light buoy, the submarine, of course, carrying a light similar to that with which the buoy was usually fitted. Twice a German submarine passed close to one of these, but as the latter had only bow torpedoes and no gun, and the Admiralty could not spare me a modern vessel, the German disappeared into the darkness before our submarine could slip and bring her bow tube to bear.

On one occasion a German submarine entangled her propeller in the nets, but, fortunately for her, was able to clear it before our patrol-boats became aware of her difficulties.

The passage between the north westernmost buoy and the Goodwins was, I was convinced, used by the Germans. Two German submarines, in trying to pass through this channel, were driven on to the Goodwins and one of them was captured. By arranging a patrol near this channel I was able to bring our two flotilla leaders, the *Swift* and the *Broke*, into contact with the raiding German destroyers on the night of the 20–21 April 1917, when, after a gallant action, two of the enemy were sunk. Also I was able to borrow from the Admiralty submarine E.52, Lieutenant-Commander P. E. Phillips, and set her to patrol to the north-eastward of this channel, where she sank one submarine.

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This success was again indirectly due to the barrage. Shortly after this E.52 was unfortunately taken away from me for other duties, so the success could not be followed up.

Captain Gayer, the German authority on submarine activities, wrote after the War :

> 'Since April 1915 the route through the English Channel had been abandoned by all but a few North Sea boats. The Flanders Flotilla (chiefly mining submarines) had considerable experience in passing the Straits, and was constantly able to overcome the renewed difficulties made by the enemy in the Channel : so on the renewed unrestricted sinking of merchant vessels, for fifty per cent of the time this route was utilized in the passage to the west coast of England. Great success was obtained in this matter by individual boats, particularly U.85 and U.53. On the other hand, the boats encountered considerable difficulty in the passage of the Channel, and owing to weather and other unfavourable conditions held the northern route round Scotland. *As the conditions for the northern route improved in March the Commander of the North Sea Flotilla ordered the route to the north of England for all large North Sea boats.*'

This confirmed the opinion I expressed in early 1917 that the large German submarines were not using the English Channel.

> 'From September 1917 onwards the new Commander decided to return to the Dover route. On 28 September U.70 was caught by the stern in a mine-net, but was able to be brought into Zeebrugge. In November U.48 and U.94 were set on the Goodwins.'

We therefore see that the Goodwins–Ruytingen barrage was responsible for the larger sea-going submarines being forced to use the route round Scotland. It was also the cause of three submarines and two destroyers being sunk.

When the above is taken into account there can be no doubt that the net barrage fulfilled a useful, if comparatively small, part in the defence of the Channel. The story of this barrage should be instructive to future Admirals, as it emphasizes the fact that no means should be neglected in

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devising and putting into force sea operations, however meagre the returns, or however vast the labour expended on them may be. Had I sat with folded hands, as my critics suggest that I should have done, and said that the good that would result from the barrage would not be worth the time and labour expended, then the above results would not have been attained.

Superficial criticism since the War has been directed against the barrage, and amateur writers on naval subjects have treated it with ridicule, either knowing little of the results achieved, or being incapable of appreciating the spirit that should underlie operations taken by the British Navy in wartime; a spirit which impels immense labour even should it command but feeble results. I repeat what I then wrote in reply to this criticism, namely, 'that the work done by the men who laid the barrage, and kept it in order, deserved to be recorded in an epic by the Poet Laureate rather than ridiculed by the sneers of carping critics.'

When I come to reconsider the problem, and especially since I know that there was no other work on which to employ the drifters and their steel explosives nets, I would unhesitatingly again institute the barrage under similar conditions.

From 1915 onwards I agitated for the manufacture of mines exactly similar to those used by the Germans, but manufacture moved slowly. I remember very shortly after Sir John Jellicoe became First Sea Lord in 1916 I went to the Admiralty and called on Rear-Admiral Ludovic Duff, who had come with him from the Grand Fleet and had taken over anti-submarine defence. I astonished him when I blew into his room by greeting him with the question: "What the dickens is your cap doing hanging on that peg?" He thought I was mad, and said: "Why not?" I replied that it should be on his head, and that he ought to be visiting the Ministry of Munitions, hurrying up the manufacture of mines. Although the new blood at the Admiralty worked hard, it was not until October 1917 that the first of the new mines found their way to Dover. By that time, unfortunately, Sir Eric Geddes had brought into being an Admiralty abortion in the shape of a barrage committee.

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As soon as I had sufficient mines supplied to me, I laid the Folkestone–Gris-Nez mine wall. My scheme for its initial use was one of common sense, and experience of the German mentality. It was briefly as follows :

Before laying the barrage I had kept one or two patrol boats between Folkestone and Gris-Nez, and I intended gradually to increase this patrol, both before and after the barrage had been laid. My idea was to give any submarines using the Narrows an opportunity of noticing that the line between Folkestone and Gris-Nez was being patrolled by night and day. This would almost certainly cause them to dive when passing this line in the daytime. I was particularly anxious not to give them reason to expect anything out of the ordinary, but merely to cause them to dive as a matter of routine. After laying the minefield I proposed to increase the patrol. This would not have alarmed the submarines but would probably have made them dive at night also. By not alarming them I hoped to make a good bag. Then, when I had the lightships in place, and all was ready to illuminate the Narrows, I could institute a full patrol and light up the area. The gradual increase in the severity of the patrol would, I hoped, tend to enhance the probability of the boats diving and yet keep secret the fact that a minefield had been laid across the Channel. The appreciation of this class of finesse was beyond the bludgeon methods of the barrage committee, the members of which had not had the advantage that I possessed of having daily for over two years been in close touch with the enemy, and therefore able to study his temperament and methods. I therefore had my hand forced, and I was ordered to institute a full patrol of the minefield six weeks before the proper time, and the position of the minefield was therefore betrayed to the Germans.

Before laying the mines I asked for three lightships to be fitted each with two searchlights ; these I intended to moor at three points equidistant along the patrol line and also to instal a powerful light at Folkestone and another at Gris-Nez. These would have given me eight searchlights to illuminate twenty miles. Behind these patrol boats would have worked, out of sight, and not lit up by the beams of the searchlights. If the barrage committee at the Admiralty had worked wholeheartedly with me, all this could have been

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installed by December 1917. But they had plans of their own, born in London and worked out in a room at the Admiralty by a body of men, not one of whom had any knowledge of Dover or of active work in the Channel in war-time. Unfortunately, by being domiciled at the Admiralty, they were accorded powers which enabled them to upset all my arrangements in the Dover Command.

Up to the middle of 1917 my relations with the Admiralty had been most cordial. Then Sir Eric Geddes took a hand in the game, and allowed the barrage committee to formulate schemes of their own which blocked mine. Since I possessed two and a half years' experience of the Straits, while not a single member of the committee had any experience of those waters, I can, without undue egotism, assert that I knew far better how to work such a barrage than did this committee of amateurs. The committee tried to exercise executive functions and dictate to me how I was to dispose the forces under my command. In fact in a most illuminating report they suggested that:

> 'In order to secure the success of any barrage scheme across the Channel, the construction, maintenance and defence and patrol of the same should be under the control of one officer who should be solely and directly responsible to the Admiralty for all matters relating thereto. They consider that any other course will lead to failure.'

Translated into plain English, this committee whose members were novices, so far as conditions of war in the Channel were concerned, was to be given sole charge of a slice of the Dover Command, and was to be able to make use of any vessels in that Command without reference to the Admiral who was responsible for the protection of traffic, raids, co-operation with the Army, etc. Was ever a more impossible suggestion made by any committee? A suggestion characterized by Lord Jellicoe as ludicrous. Had the committee been appointed by a naval officer and not by a civilian First Lord, he would on receipt of this report have instantly dissolved the committee and drafted its members to some other and less harmful employment.

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What in essence the committee suggested was, that I should be dismissed and the committee take over the Dover Command. What eventually did happen was that I was dismissed and the chairman of the committee was appointed in my place. After this little was heard of the committee, whose actions then seemed to fade and disappear.

It is only natural that if Admiralty committees whose members can have little first-hand knowledge of the war area are allowed to initiate schemes of their own in opposition to those of the officers commanding those areas, friction, delay, and inefficiency are bound to occur. The result was that a system of lighting was evolved in London by means of flares which lighted up intensely the vessels of the patrol line (which it was highly desirable to keep in darkness), that blinded the observers in the patrol (whose eyes should have been most carefully guarded from adjacent strong light), and which, compared with the searchlights, had a very circumscribed area of illumination. The result of this grotesque system was that, after the lighting had been instituted, *only four out of the submarines which were sunk by the mine barrage were sunk at night-time.* Just fancy that! In spite of one submarine having been sunk at night before the minefield was even completed under the scheme I had in force, during the next six months only four more were sunk at night owing to the fundamentally unsound system of lighting and patrolling that had been introduced, while during the same time nine were sunk in the day-time. Eventually searchlights had to be installed as I had originally proposed; but then it was much too late. So much for the Admiralty barrage committee. Had I been left in peace and been loyally supported, I have little doubt that our sinkings would have occurred earlier and been materially larger.

There is one incident of which I am reminded by coming across, when sorting old papers, a couple of dozen letters, mostly anonymous, spitting venom and hurling poisonous epithets at my offending head. The reasons for this outbreak were founded, firstly, on my stating in my report on the action between the *Broke* and the German destroyers that we were 'fortunate in saving the lives of several of the enemy.' This to my correspondents was anathema. They evidently did not know that one of the traditions of the

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British Navy is to save the lives of any of their opponents who are unarmed and incapable of further resistance.

Instances abound in the old wars of boats being lowered from our ships in the middle of fleet actions in order to save the crews of enemy vessels which were sinking or had been sunk.

A more cynical explanation can also be read into the word 'fortunate,' since it is from such captives that useful information regarding the enemy's organization and plans can be obtained. But the true reason on this occasion for the use of the word 'fortunate' was to convey to all concerned my approbation of their humane action.

The second cause of offence to these persons, and probably hundreds of others, was that I sent a wreath to be laid on the grave of those of the enemy who had fallen in the action. A few months before the engagement one of the gallant airmen attached to the Dover Command had been killed while flying over Ostend. Shortly afterwards a German airman dropped a packet on the Dunkirk aerodrome which contained a few trifles and a note asking that they might be sent to the poor boy's relatives; among these were two photographs, one of the funeral service, the other of the lad's grave. There was also a piece of the ribbon of the wreath that had been laid on his grave. I was much impressed by this act of courtesy, as well as by the fact that the Germans had recognized that it was proper to accord a ceremonial burial to a brave enemy, as evidenced by the photographs. I then determined that, if occasion arose, the Dover Patrol should not be backward in acknowledging so generous an action. Therefore, on the occasion aforementioned, I sent a wreath inscribed to 'a brave enemy.' This was expanded by some of the daily journals into 'a brave and gallant enemy.' The word 'gallant,' thus gratuitously inserted, added fuel to the fire raised by the anonymous incendiaries.

I might here remark that, in the early days of my command at Dover, I had considered it advisable to place under constraint a young man who had confessed that he had come to Dover to do some 'spying' for one of the most popular of the daily papers. For this act I was never forgiven; and afterwards I became the subject of frequent virulent attacks by the journal in question.

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Chapter XIII

DOVER (*continued*)

IT IS IMPOSSIBLE TO TREAT CHRONOLOGICALLY SO GREAT A diversity of operations as those which we had to undertake at Dover. Nearly all of these were simultaneously in progress, so I must be excused if I hark back in order to discuss the more important features of the bombardments of Ostend and Zeebrugge which were carried out by us in 1915–17.

The 12-inch monitors had been fitted with the barbette mountings and guns *ex* the old *Majestic* class, the design of which dated back to 1890. These had been hurriedly transferred; and, since the old pressure pipes of the hydraulic system had become crystalline, and had not been re-annealed before erecting, they not infrequently burst when in subsequent use. This was apt to cramp our style somewhat during bombardments.

The chief point of interest of the first of these attacks on Zeebrugge, in 1915, was the use of drifters to shoot a barrage of nets on the sea side of the monitors, as a protection against submarines. I selected the 'sea side' because this was the direction from which I should have attacked had I been in command of the submarine boats at Zeebrugge. The water inshore of the monitors was shallow, to seaward it was deep. Obviously, the best method for the submarines to adopt was to creep out near the Dutch coast, and then attempt to torpedo the monitors from seaward.

The use of drifters was a particularly interesting experiment, as the vessels were merely small fishing craft manned by fishermen who were totally unaccustomed to sail in close company. But, as was always the case, their captains and their crews rose nobly to a novel occupation.

The maximum range of the 12-inch guns of the monitors was about twenty-two thousand yards. At this early period of the war seaplanes were in a very undeveloped and

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unreliable state. Experiments with wireless in aircraft were in their infancy. Only one or two of our 'planes had experimental fittings installed. Even so, they were only receptional, and none of our machines could transmit morse code messages until the following year. After a few days' trial I saw that it was impossible usefully to employ them for spotting. The only method, other than that of observing from high up above the target, was to observe the burst of the shells from two stations wide apart. I therefore designed two portable islands which could be laid at a fair distance from each other, and closer to the shore than it was possible to bring the ships. These islands were fitted with instruments for measuring the angular directions of the bursts of the shells. Of course, I knew that such a method could only give approximate results, but it did afford a chance of getting reasonable accuracy. Like the net barrage across the Channel, it was not by any means ideal, but it was the best that I could at that time devise. It was, at all events, far better than visual observation from the monitors, or than sitting tight and doing nothing at all.

I must honestly confess that I was relieved when that first operation was over. To take out sixty drifters at night for eighty miles, use them to shoot nets off an enemy's harbour (the defences of which were largely unknown, for aerial photographs at that time were practically useless), lay out observation stations, and take the whole armada back again to Dover was, I felt, a most hazardous undertaking.

After the extent of the defences of Zeebrugge became known to us, and we learned that, at that time, normally only a few destroyers were stationed permanently on the Belgian coast, the undertaking appears to have been a simple one; but there is no doubt that, with the scant information at my disposal, it was a hazardous expedition, which might well have ended in disaster.

I had intended, after firing on Zeebrugge, to go on the same day and fire at the Ostend batteries; but, as 50 per cent of the monitors' heavy gun mountings gave out during the Zeebrugge firing, I had to postpone the attempt.

When, at last, repairs to the gun mountings had been effected I was able to carry out this bombardment; but, as we approached Ostend, a thick mist rose over the town,

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gradually blotting out everything except the tall tower of the cathedral. It was impossible to fire without incurring the danger of damaging the houses, so I waited among the shoals until the weather cleared. While we were waiting we were bombed by the enemy aircraft. This was one of the only two occasions that a ship of the Dover Patrol was hit by a bomb when under way.

I had not the slightest intention of risking the monitors by allowing them to come under fire from the shore batteries. To do so would have been a foolish game. No ship, much less a shallow-draught ship like a monitor, is a match for a shore battery; so I adopted the more businesslike course of remaining under way, and firing at a range that I estimated was outside that of the batteries. War is very largely a business proposition, and an Admiral has no right to lose ships, or seriously risk losing them, without at least an adequate return. It matters not if this return may be material or moral, but a chance of obtaining a reasonable return is obligatory.

The Admiralty Intelligence Department had credited Ostend with only one battery of large-calibre guns, named the Hindenburg battery, the guns of which had a reputed range of 16,000 yards. I therefore chose 18,000 yards as my distance from the shore. Soon after opening fire I saw that the centre monitor was being attacked by salvos of heavy shell; I therefore signalled to the monitors to alter course together, and we steamed out a further 4000 yards, which brought us to the maximum range of our 12-inch guns. Immediately after I had made the signal, the shore guns turned on to the *Lord Clive*, the ship in which my flag was flying. The officer in charge of the Tirpitz battery had evidently tumbled to the fact that the ship making a manœuvring signal must be the flagship. On the way out we were kept constantly under fire, and shortly after we had again renewed the action we were once more straddled by a salvo, three of the shells striking the ship. One carried away the iron signal halyard block at the masthead, which unfortunately hit Commander Norman Carter, who was standing close to me, on the head,[1] and coiled the signal

[1] This injury led to his being invalided from the Navy and his subsequent death. A fine officer was thereby lost to the country.

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halyards round the neck of Captain Humphrey Bowring, my Chief-of-Staff. Another shell hit one of the after 3-pounder guns, knocked it off its mountings, wounding several men, and then grazed the bulge; the other exploded in the water abreast of the fore bridge, damaging the starboard bulge forward. Fortunately neither of the first two shells exploded. The monitors were not built for this sort of work; their magazines were too close to the upper deck, nor had they armoured decks. Moreover, only a fool would willingly engage modern shore batteries with a ship, unless there happened to be some very good reason for so doing. I therefore signalled to the whole Fleet to end the operation, and turned the monitors away to the northward. The Tirpitz shells pursued us for a short time and then ceased fire.

The firing from the battery commenced at 3.39; and altogether twenty-one shells fell near, or hit the *Lord Clive* before ceasing fire at 3.59.

It was a rather peculiar sensation to steam away at the magnificent speed of seven knots while being shelled and having no stern fire with which to reply. Our speed was so slow that, had the drifters and destroyers been meanwhile attacked by surface craft, they would still have been kept under the protection of the fire from the monitors until they had hauled their nets and followed us. Although the monitors had no after guns they could at any moment have turned round and continued the action.

I afterwards discovered that the Tirpitz 11-inch battery had a range of 34,000 yards. The officer in command[1] informed me, after the War, that he had used half, instead of full charges, as it was the first time that the battery had been in action, and one shell had burst prematurely. The battery therefore ceased fire when we were at a range of 25,000 yards, instead of continuing to fire for another forty minutes. I was duly thankful that I had not anchored, as originally I had intended to do when preparing the plans; but that I had, after due thought, come to the conclusion that it was possible that I might tumble up against some surprise, and had therefore kept the ships under way. Had I anchored I most certainly would have had to regret the

[1] Korvettenkapitän Graf Karl von Pelken.

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loss of at least one monitor, for a monitor at rest at 18,000 yards was an easy target for the Tirpitz battery, and one not likely to be missed after the first few salvos. The magazines of the monitors were so close to the upper deck that the plunging gunfire would almost certainly have brought with it a deadly disaster.

In 1916 and 1917 I was able to improve greatly on our 1915 methods. This was due to three causes:

(1) The 15-inch monitors had arrived with largely increased range, more accurate guns, and increased speed.

(2) Aircraft spotting had become reliable; and morse communication both to and from the 'planes had been perfected.

(3) A good smoke screen had been developed.

I need not give here an account of the large amount of time that we spent over the development of the smoke screen, nor of the valuable assistance afforded by Sir Richard Threlfall and his son. Suffice it to say, that between us, after many unsuccessful attempts, in the end we evolved a simple and efficient phosphorus burner; and that by the use of several of these, we were able to produce a screen of vast proportions and great density. The smoke screen was absolutely necessary to protect our monitors when firing, since the German batteries could ensure accurate hitting at ranges well beyond the maximum range of our 15-inch guns.

There was a limit to the closeness to which we could approach the Belgian coast, namely, the necessity for mooring the 'aiming-light' ship out of range of the batteries. Any vessels moored within range of the guns on the coast, for anything like the time that the aiming light[1] was in operation, would most certainly have been sunk. I could not be certain that, in the weather usually met with on the coast, the aiming light would be constantly visible from the monitors which were firing, if it were anchored at a greater distance than three miles. The

[1] The direction of the aiming light from the ship gave a line in space from which the angular direction of the target could be laid off, and to which could be applied any small corrections which might be found to be necessary from the reports of the spotting aircraft.

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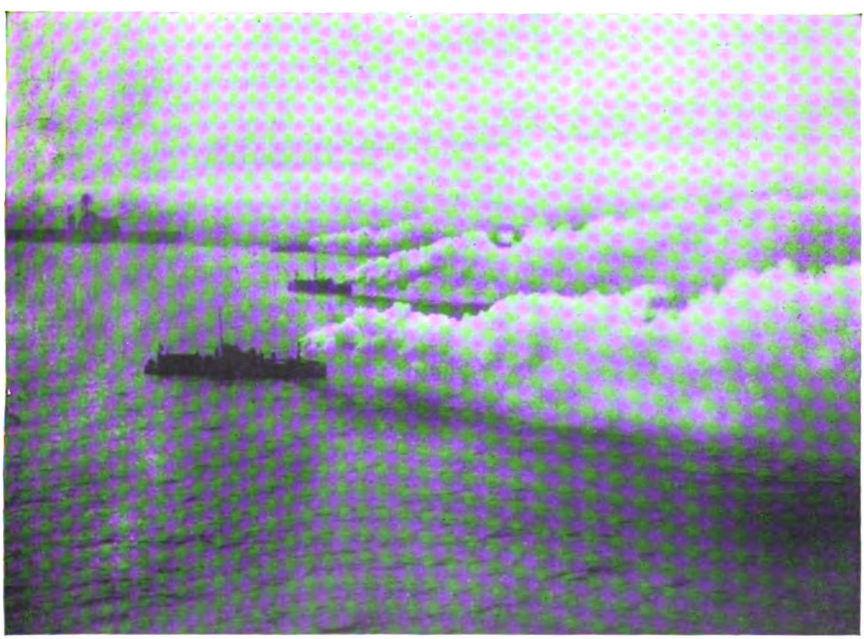

SMOKE-SCREENS

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German batteries had a maximum range of about 34,000 yards, hence 28,000 was about the nearest that the monitors could get to the coast in order that the ship carrying the aiming light should be reasonably safe. This is the answer to those who have asked why our bombardments were carried out at long range, and why I did not take the ships in closer. It was necessary to use a vessel the size of a monitor to carry the aiming light, so as to obviate the motion to which a smaller vessel would have been subjected by the sea. If I had my time over again in command of the Dover Patrol I would borrow a vessel smaller than a monitor, with a very small metacentric height, and fit her with a searchlight for use as an aiming light. I could then have closed the shore and fired at somewhat shorter ranges. This would have been an advantage when firing at so small a target as the Zeebrugge lock-gates, but of no value when firing on Ostend.

I introduced a new system of observing the fall of shot by using a *line of reference* and a *point of reference*. This greatly simplified both the observation and the application of the necessary corrections to the directors, and was a considerable improvement on the 'grid' method we had, at first, been using. This method could only be used when the targets were few; since the observers in the aeroplanes had to learn by heart the distances of certain well-defined objects from one definite point on the target. But as we had only two targets, Zeebrugge lock and Ostend dockyard, no great strain was put on the memories of these officers. One really great brain-wave came from one of the officers of the *Riviera*, the seaplane carrier attached to the Patrol, which relieved the observing office in the aeroplane of all time-taking. He merely made a long buzz on the W/T when each shell burst, and then signalled the result of his observation; each ship, having, of course, also taken the time when each round was fired, could, by allowing for the time of flight, determine whether the round was fired by her or another ship. Eventually I was able to leave the Downs, and, without sighting land, to range on and break up Ostend dockyard, an area of about twenty acres, at a range of 27,000 yards without doing any damage to the adjacent houses, and return again to Dover without ever having sighted the

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Belgian coast. Only on one occasion, when probably the driving band came off a projectile, did a shell land in the town of Ostend, and this, as bad luck would have it, hit the cathedral. But to arrive at this result took me one hundred days of thought and scheming.

Zeebrugge lock-gates presented a far more difficult target than Ostend dockyard. Here I had to fire at about three hours after high water, so as to be certain that at least one caisson would be closed. If this had been hit the water pressure would probably have completed the damage by crumpling it up. The angle at which to attack these lock-gates presented a difficult problem. If I fired up the canal, the target presented by the width of the lock-gates was very small; its length, that is the breadth of the target, was appreciable. If I selected a place from which I could fire in the direction in which the caisson was lying, the reverse was the case. So I split the difference by firing at an angle of forty-five degrees. The two large coast batteries, the Kaiser Wilhelm and the 15-inch Jacobsen, necessitated the aiming-light ships being moored at a maximum distance, so I was forced to a firing range of about 28,000 yards. At this distance, given perfection in spotting, theoretically only one round in sixty-seven would hit a lock-gate. So it was not a very hopeful undertaking. This was the only bombardment in which a closer range would have been an advantage.

It required considerable patience to bring off this attack, because I was determined to wait for perfect conditions. First of all I had to get the ships into position before daylight, since the enemy had learned from us the use of a smoke screen. So it was necessary to get off the ranging shots before a clear sight of the gates from the aeroplanes was blotted out by smoke. Next, in order to ensure at least one gate being destroyed if hit, the tide should have ebbed from two or three hours. Not only had the right state of the tide to occur shortly before daylight, a condition which happened only for about six to ten days in each month, but on these days the weather had to be suitable for spotting from the air. It was not often that both these conditions were simultaneously fulfilled.

The following is an account of the delays that took place when trying to get off the Zeebrugge attack:

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The 25 March 1917 was the first day on which an attack was possible; arrangements were therefore made for this day. Mist came down in the afternoon and I had to cancel the programme. From now onwards the tide was not suitable and the weather was bad. April 8 appeared hopeful, but the weather changed and the attempt had to be countermanded. The weather continued bad until the next time the tide suited. On the night of April 18 I was at last able to make a start; but on arrival at Dunkirk I found that the *Erebus* had swung foul of a destroyer and then fouled her own propeller; it was cleared only just in time to make a start for Zeebrugge. Then, while crossing the shallow banks, the *Marshal Soult*[1] sheered while the *Terror* was turning, and parted her tow. It was then too late to hope to get to Zeebrugge by daylight, so I gave up the attack and dispersed the monitors. It was a patience-wearing, cold and cheerless night, but it is as well when several troubles are to be encountered that they should come together.

On Sunday 22 April a fresh start was made, but low clouds necessitated giving up the attempt at 3.15 a.m. On 24 April another attempt was made, but the weather became hopeless. After this the Commodore at Harwich had other work on hand, so further attempts had to be postponed, as the Admiralty did not wish us to attack without the support of some of the Harwich destroyers.

On 10 May the weather appeared to be promising but it then turned to haze. On 11 May 1917 the wind changed to N.E. I started at 6 p.m. in the *Terror* with the *Erebus* and *Soult*, the latter in tow, and the usual fleet of M.L.s, etc., passed the North Goodwin nets at 10.15 p.m. and arrived at the firing position with all the vessels and commenced firing at 4.45.

Thus I had had to put off the attack seven times through various causes which were beyond my control, and to wait for forty-seven days before a suitable chance occurred.

At a meeting at the Admiralty in connection with my proposal for an attack on Zeebrugge, the chief arm-chair critic suggested that more frequent attacks by gun-fire on the coast might have taken place, the inference he wished

[1] I had to tow the *Marshal Soult* because of her slow rate of steaming.

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to convey being that I had been lethargic and had not made the best use of the ships under my command. This officer was promptly silenced by Sir John Jellicoe, who pointed out that weather and gunnery conditions governed the dates of firing. This critic, in his office, knew nothing of the fickle changes in direction and strength of the wind, of variations in visibility, both horizontal and vertical, and that these, and also the tides, had to be suitable an hour before daylight on one particular day before firing could be carried out. His glancing at a chart naturally failed to conjure up to his mind an appreciation of these factors and their intimate connection with accurate shooting; undoubtedly others at the Admiralty were equally inadequately informed, but I mention his case in particular, as he was one of the leading lights of the barrage committee.

These bombardments were pleasant diversions, but the longer I was in command at Dover, the more I became convinced that the primary duty of the patrol was the protection of traffic. It was for this reason, as I have already stated, that I instituted the Belgian Coast Patrol. I have also shown that it was impossible to stop submarines from diving to the north-eastward and passing the Straits submerged, or slipping through at night when they were far more invisible than the patrol boats. Nothing short of my mine wall would do this.

I feel, however, that I must cite the following to show how officers may fail to appreciate realities when working in an office ashore, and also out of touch with sea conditions:

The Admiralty installed directional wireless stations on our east coast; a very necessary and useful thing to do. But some brilliant officer had a notion that these could be made use of to catch submarine boats. It was argued that if I was informed by the Admiralty of the position of a submarine, as fixed by directional W/T at the moment that it reported its position on nearing Zeebrugge, I ought to be able to attack and sink it. Well, let us look at the time intervals involved.

The submarines reported themselves usually when they were fifteen miles from Zeebrugge, and about 60 miles from the Goodwins. The information as to their position when they made their report took, generally, some twenty

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minutes to pass from the fixing stations to the Admiralty and down to Dover. It would then have taken about ten minutes to pass this information to the Patrol. Supposing, even, that I had a patrol boat close to where the submarine had been when she was reported (which was in reality an impossible position in which to keep unsupported vessels), half an hour would have elapsed, during which time the submarine would have travelled six miles. Moreover, it would be certain that the position estimated by the submarine would be at least two miles out of truth; in addition, the position of the patrol boat would have been at least one mile different from the place where she estimated she was. Visibility, at night, of a submarine is about half a mile. It was, therefore, in practice an impossibility to locate a submarine in the face of these practical difficulties. Moreover, the fact of the patrol boat acknowledging the report would have given away her position to the directional station on the Belgian coast, and I should have been obliged to keep a strong patrol at sea to prevent the destroyers at Zeebrugge raiding and sinking the patrolling vessel. From a practical point of view it would have been fatal to have denuded the Narrows of destroyers for such an ephemerally useless purpose. Of course the officer at the Admiralty was ignorant of all these practical difficulties; but the failure to stop submarines so reported served to spread the impression that the work at Dover was being carried out inefficiently.

As the end of 1917 approached, and the mines for the mine barrage began to arrive, I was more than ever forced to husband my resources, especially as regards destroyers; for the barrage would require strong protection to ward off a raid. It is true that I had received one or two more destroyers during the year, but an adequate defence of the barrage, and also of the shipping routes, required more than I had at my disposal. I became more than ever loth to risk them in night scraps off the Belgian coast.

One day, while visiting the Admiralty, I was informed that news had been received that the Germans intended, on the following night, to send round a division of destroyers to Zeebrugge. I telephoned to Dover to have our destroyers ready to move up after dark in order to make an attempt to

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intercept them. I then saw the Chief of the Staff, Rear-Admiral Sir Henry Oliver, and asked if any boats that I might lose or have disabled would be replaced. He told me that this would be impossible; convoy and other duties quite precluded my being given any more. I was then faced by the problem of what was the right course to pursue in view of the general situation at Dover.

I sat down and reviewed the position.

(1) The place at which we would attempt to cut off the German destroyers was only twelve to fifteen miles from Zeebrugge.

(2) Any scrap with the enemy was bound to develop into a running fight, at high speed, in the direction of Zeebrugge. In half an hour the boats would be actually at the mole head.

(3) It would be very difficult to salve any of our disabled destroyers before daylight, or before our boats came under the fire of the shore batteries; whereas any German destroyer which might be disabled would be close to her own port and protected by friendly batteries.

I had ever in mind the satisfactory result of the engagement of the *Broke*, Commander E. R. G. R. Evans, and the *Swift*, Commander Ambrose Peck, with a division of German destroyers off the Goodwins, when we were able to sink two of the German vessels; and the *Broke*, seriously damaged about her bow, was brought safely into Dover harbour. Had a similar action been fought off Zeebrugge the results might well have been reversed.

In all the raids off Dover the German destroyers were obsessed with the fear that any firing that took place would be certain to bring up our reinforcements. Such a fear would not, of course, have been felt by the German destroyers in a scrap off Zeebrugge, when firing would have brought up *their* reinforcements; so they would most certainly not have run away, but being reinforced by destroyers from that port, would turn and fight our vessels. Whatever the result of the scrap might have been so far as the German destroyers were concerned we, most assuredly, would have lost three or more destroyers.

The advantage of luring the enemy into your home

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waters before fighting him, compared with the disadvantage of hazarding an action (except for very strong reasons) off his naval ports, needs no further emphasis. In addition, a night scrap is a matter of 'perhaps,' since all gunnery science is thrown to the winds in a close night action; moreover, the Germans had shown themselves very proficient in using their guns and torpedoes at night. I had, therefore, no right to assume that, in a blind action, the German losses would be greater than our own. If we met the enemy off Zeebrugge it is certain that some vessels on each side would be disabled, and the ultimate disadvantage would have been entirely on our side. If none of the enemy's vessels had been disabled the scrap would merely have been a risk for no advantage gained.

Viewing the matter dispassionately the conclusions I arrived at were:

Supposing that the German destroyers did arrive at Zeebrugge, and that they did not then raid the Straits, they were as useless at Zeebrugge as if they had remained in the Elbe. If they did raid the Straits they could do no material harm. If the German destroyers meditated a raid on the Suffolk coast, the Commodore T. at Harwich was well able to deal with them.

All that the German destroyers could do in a raid on the Channel was to fire aimlessly into Kent. But, if they did come, we should have this great advantage, namely, that in the case of a scrap, the injured boats on both sides would be off Dover and not Zeebrugge, a condition infinitely better for salving our own vessels and capturing theirs. In fact, strategically, it was far better to attract the destroyers into the Dover area than to attempt to cut them off near Zeebrugge.

The Germans had an almost unlimited supply of destroyers to draw from, since they knew at what date the High Sea Fleet would put to sea; and, in the meantime, could use their destroyers elsewhere; whereas we, not knowing on what date their fleet might issue forth, had to keep a large majority of ours up north with the Grand Fleet. The loss of one or two German destroyers was to them a very small matter compared with what such a loss meant to me.

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It was tempting to have a scrap, if only as a response to the Press campaign, which was insistently asking 'what the Admiral at Dover was doing?'

And another reason which made me wish for a scrap was that I was really anxious to let the destroyer officers and crews have 'a run for their money.' In other words, they had had a lot of hard work and very little fun, and they would dearly have enjoyed meeting the German destroyers. For, after all, we were at war, and they were missing the more attractive work that was falling to the lot of other destroyers.

But, in the end, I was forced to decide that it was not good enough to risk my destroyers just at a time when they were going to be absolutely essential to me, so on arrival at Dover I cancelled my order, very much to the disappointment of all concerned.

In fact, my time at Dover was to a great extent a series of disappointments, both to me and to those who were serving under me.

Early in 1916, before I had fully appreciated all the implications of harbour blocking, I had evolved a plan for blocking Ostend.

I must confess that I was greatly pleased with the principle embodied in the scheme, and so was Admiral of the Fleet Sir Arthur Wilson. It really did go far towards providing a method of blocking which would have caused the Germans considerable annoyance. It was totally different from the useless method used at Zeebrugge, whereby a channel was left which the submarines could use. I will give a short description of this method later.

However, before it could be put into operation a proposal to land troops in Ostend came under review. This had to be abandoned when the Kaiser Wilhelm battery was installed and could range the jetties at Ostend; also General Sir Aylmer Hunter-Weston, who represented Sir Douglas Haig, vetoed the proposals on account of the proximity of houses to the place of landing, and the consequent street fighting in which our troops would have been involved.

I have never, however, forgotten the intense feeling of relief I felt that I had not blocked Ostend, when the question of landing troops inside the harbour came to be discussed,

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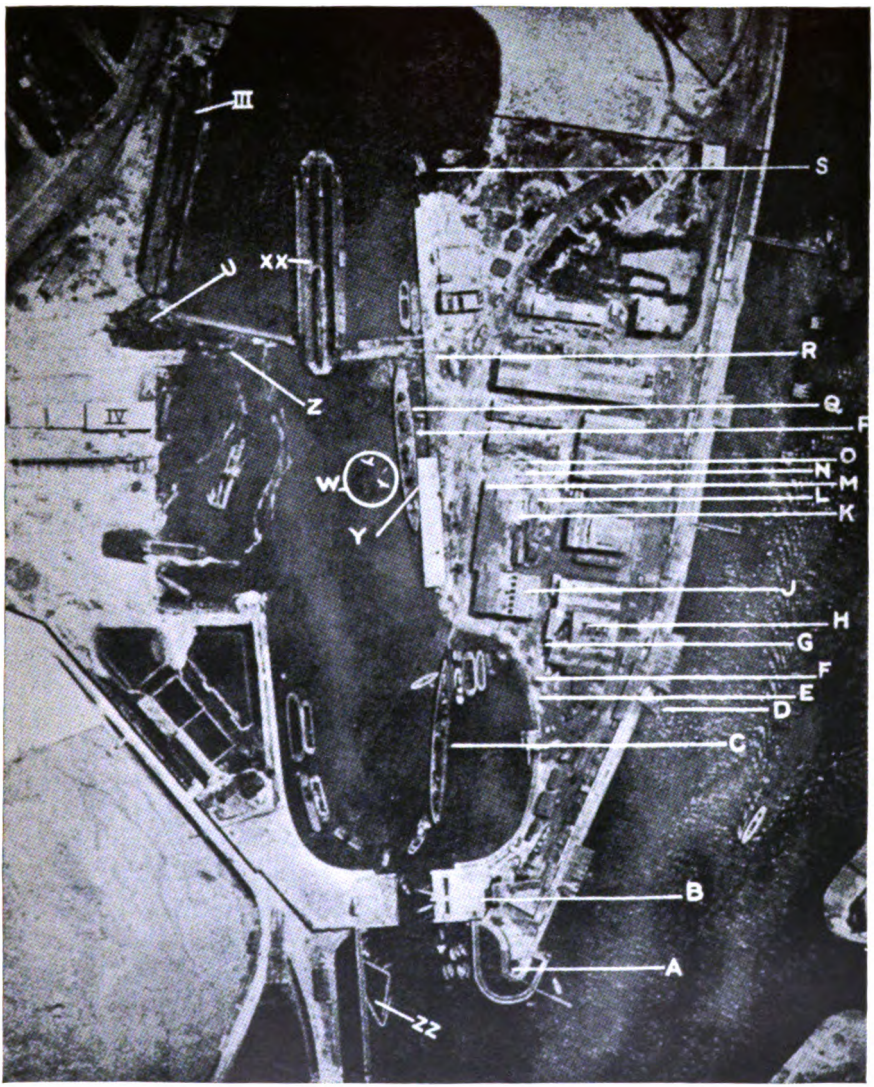

THE RESULT OF A BOMBARDMENT OF THE DOCKYARD AT OSTEND

Showing the damage done by each shell.

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for I felt that I had been on the verge of doing a very foolish thing. I came to realize that it was impossible to block the harbour for more than a month against the exit of submarines or destroyers, even if a stone pier were built across the entrance; for at low water all the parts above water could be demolished, and then at high water there would be a gap with fourteen feet of water for the submarines and destroyers to pass through. But if I had blocked the channel with old ships the entrance would have been completely closed to the entry of larger vessels. In fact, it would have been available for use to the very vessels I wished to keep from coming out and closed to those to which I wished to give free entry.

The next and greatest of all my disappointments came with the abandonment of the landing on the coast to the eastward of Westende. I must own that I had no cause of complaint when this occurred. Sir Douglas Haig had originally laid down, perfectly definitely, that he agreed to the landing only if and when the Army got as far as Roulers. I was kept continually informed as to the progress, or rather want of progress, of the Army at Paschendaele. When it became evident that the troops would in all probability be held up, Sir Douglas called a conference at G.H.Q., which was attended by General Sir Henry Rawlinson, commanding the Army on the coast, the Chief-of-Staff of the B.E.F., and myself. Before the meeting I talked with Sir Douglas, who reiterated his objections to carrying out the landing before he had advanced as far as Roulers. I tried to persuade him to carry it out even if the advance of the Army remained held up. I pointed out that we could, in half an hour, destroy one hundred and twenty guns on and near the great dune, and that the First Division would then join hands across the Yser Canal with the Army on the coast. He did not, at the moment, definitely negative the landing. General Rawlinson and the C.O.S. were then called into the room. The former was not averse to the landing taking place as a raid, but the C.O.S., undoubtedly representing the views of G.H.Q., was strongly averse to the operations, and argued in favour of the First Division being sent to help in the general mêlée at Paschendaele. Of course, I could not argue against the military point of view; nor

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could I advance any grounds for the landing other than the capture of the guns, so long as Sir Douglas did not intend that the army on the coast should advance and capture Ostend. Thus the General Staff carried the day, and the only concession I could get was that the date for the landing should be put forward one month, in case the advance of the Army materialized. This alteration in the date necessitated the landing taking place one hour before daylight instead of at dawn; but General Rawlinson played up nobly, and made no objection to this condition. However, during this extra month the Army was not able to advance a hundred yards, the mud having literally glued the troops to the positions they were then holding; so the operation was abandoned.

It was indeed a pity, for the First Division were thrown into the general maelstrom at Paschendaele, and suffered heavy losses, whereas they might well have first carried out the landing, when the casualties should have been very slight. This, if successful, as in all probability it would have been, would have given a general fillip to the nerves of the people in England.

In 1938 I attended a lecture given at the Staff College at Camberley on the proposed landing. The lecturer was of the opinion that a landing would have failed, basing his view on the fact that since the War the German officer in command had stated that he knew of the proposal, and had made dispositions to frustrate it. There were, however, three points that I consider the lecturer did not take sufficiently into account. First, the Germans had no idea that we could have landed tanks, therefore the tanks might well have made short work of their defences. Secondly, they could have had no accurate information as to the exact places of landing; and, thirdly, we could have cleared out and captured all the guns mounted in the Grand Dune, and have joined hands with our Army on the Yser in half an hour, if it was found that an advance farther to the eastward was likely to have been held up.

Looking back, I see now that it would have been better if, in the first instance, I had told the monitors' crews (for they were those chiefly implicated) of Sir Douglas Haig's reservation concerning Roulers. But, at the time, it seemed

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most improbable that our troops would be held up, and unable to advance the short distance between Ypres and Roulers, so that I saw no reason to introduce any doubts into the minds of officers and men. But it would have been, in the end, less of a disappointment to them had I done so, for the curtain at the finale would have been gradually lowered instead of being suddenly let down.

I spent an enormous amount of time in devising and working out details of this operation. The use of pontoons was novel; the survey of the coast, the method of checking the survey and the estimation of the tides on the coast were also novel, and pleased me immensely; lastly, the use of the taut-wire system of hitting off the exact spots for landing (a method suggested to me by Sir Henry Oliver) made the whole scheme possible. Why—oh why, indeed!—was this scheme of measurement not used for the attempted blocking of Ostend? If it had been, the blockships could not possibly have missed the harbour.

Several of the above problems and others with which I was faced at first sight appeared to be insoluble. I found, however, that when faced by difficulties the best procedure was to leave the problem alone for a week or ten days. I invariably found that during the lapse of time my subconscious mind had been steadily at work, and that in the end the difficulties had largely been solved. I commend a similar procedure to all who may be faced by difficult problems.

The Dover Patrol might almost have been called the left wing of the Allied Armies, since it was our business to prevent any landing behind the lines occupied by that force and to guard it against sea attack. In 1916 Sir Douglas Haig asked me to do all I could to keep German troops in Belgium, so as to prevent their being sent farther south as reinforcement during the early days of the battle of the Somme. By collecting a large number of vessels off Dunkirk, and within full sight of Ostend, I hoped to cause the Germans to believe that a landing on the Belgian coast was imminent. We were fortunate in that our vessels were not attacked. Surely the belief that a landing was being prepared should have impelled an attack by the German destroyers on the vessels we had collected? In fact, they missed the chance to emulate, in

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a minor degree, the action whereby Drake singed the beard of Philip II of Spain. Of course, we had protecting destroyers, but the attackers of a convoy, at night, have more than a two to one chance of causing the greater damage. Anyhow, we were not attacked, and Sir Douglas was able to inform me that he had received sure information that troops which otherwise would have been sent south had been delayed and kept in the north over the crucial time.

There is one matter to which I would call the attention of Admirals in command of operations, and that is the very difficult question of how far it is possible to keep secret any undertakings that are on the *tapis*. In practice it is almost impossible to keep any matter secret. Take, for instance, the Great Landing. I did all in my power to prevent any rumour of this proposal leaking out. The monitors were kept in quarantine up the estuary of the Thames, the 1st Division in quarantine at Le Clipon, the minimum of information was imparted, and that much only to the very few that were implicated. In fact, when the First Sea Lord telephoned to me one day, over our private wire, saying that he was sending an officer down with information that might prove useful to me for the landing, I replied that I knew nothing about a landing, but would write. In my letter I pointed out that the telephone operators could listen in, and therefore it was better to make no direct mention of the landing except in private correspondence. Yet, in spite of all my precautions, I was told that the project was being openly discussed in the London clubs. One of the curses in war is the man who puts together scraps of information that he picks up owing to his official position, and, having arrived at a fairly correct conclusion, openly talks about the matter, feeling himself in no way bound to secrecy, as he has not been directly informed of the matter, but rather priding himself on his cleverness, or rather his underhand detective work. In the case of the landing, those gossips in the London clubs, who plumed themselves on their stolen knowledge, little cared that a thousand or more lives might have been jeopardized by their selfish chatter.

In the early part of my time at Dover, when the Admiralty refused to give me an adequate staff, I was in the

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RESULT OF THE BOMBARDMENT OF THE TIRPITZ BATTERY BY A 12-INCH GUN LANDED IN BELGIUM IN THE SPRING OF 1917

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habit of staying up at night typing out my own orders, as I insisted on all operation orders being typed by an officer. When I reported this to the Second Sea Lord, he grudgingly gave me an additional assistant paymaster from the Royal Naval Reserve, which previously he had refused to do.

I must digress for a moment to record that for the whole of 1916–1917 my work was very hard and continuous. Very few nights passed when I was not called up to make some decision. This not infrequently happened two or three times in one night, and on one occasion I was roused up seven times! I always made a practice of leaving my bedroom on each occasion so as to ensure being thoroughly awakened. I had in my memory two occasions—one in the Channel Fleet, when during manœuvres an overworked Flag Captain fortuitously altered the course of the Fleet during the night and next morning had no recollection of having done so; the second occasion was when, after three nights on deck, I was read a signal and detailed two boats for special duty without remembering the next day that I had done so. The captains of the destroyers must often have wondered at my frequently sleeping in the chart-house on my trips across to Dunkirk at ten o'clock in the morning. They little knew how disturbed my night's rest had probably been.

To return to the subject of secrecy, the main objection to secrecy I discovered to be that my own officers and men remained in the dark and chafed under the belief that nothing was in prospect, whereas the gossips in London gained full information of what was in progress. Frederick the Great is credited with the remark that if his coat knew of his plans he would take it off and burn it. But he was able to shoot, or hang, tittle-tattlers in order to encourage silence. It is a pity we have not the same summary powers in war-time—a good many arm-chairs in the London clubs would have lost habitual occupants. One thing, however, is absolutely certain, and that is, that no operation orders should be issued until the last moment. Explanations may take place before, but the script should be kept back. This is especially necessary in the case of small craft, which may be captured before papers can be destroyed. Such craft should only be given those portions which directly affect

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them, and these should never include the date of the proposed operation. The great loss of life at the Chemin des Dames, which was responsible for the subsequent mutinies in the French Army, was due to orders having been issued too early to officers in the trenches. These were captured in a raid, and effective preparation made for the subsequent massacre. Another important point is to draft signals so that the omission of a single word does not alter the sense. Hence the word 'not' should never be used, but the negative conveyed in some other way. For instance, instead of 'the operation will not take place,' it would be better to say 'the operation has been cancelled.' The omission of the letters B.S.T. on the part of a boy telegraphist kept the Prime Minister and several Cabinet Ministers in the dark for half an hour off Dover harbour, before the vessel in which they were taking passage was admitted by the examination service. This was in the days when submarines were active; so the delay, as can well be imagined, was not welcomed. It would have been a queer mischance if, at a time when tremendous issues were on foot, the carelessness of a boy in omitting three letters from a signal had caused the death of the Prime Minister and half of the British Cabinet.

Twice Mr. Arthur Balfour, then First Lord of the Admiralty, offered me the post of Head of the Naval Air Service. At the time I was preparing details for the Great Landing; I was therefore most anxious to stay at Dover. So I refused. On neither occasion did Mr. Balfour, who was a dreamy philosopher, send for me to discuss the appointment, so I looked on the matter as one of small moment. Subsequently, in 1918, Lord Curzon informed me that the War Council much regretted that I had refused. I knew nothing about the Naval Air Service at the time that the offer was made, other than that portion which was under my command at Dover and Dunkirk. Nor did I know that great difficulties as regards production and supply were being experienced. Had I known that it was because of my experience in manufacture and supply that my services were particularly needed I would, of course, though with many regrets, have accepted the post.

After the abandonment of the Great Landing I looked

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round for some innocuous operations which would compensate the officers and men of my command for their disappointment.

The only harmless operation I could think of was to land on the Zeebrugge mole, destroy the seaplane base, sink the destroyers that usually lay alongside, destroy the mole-head battery, and incidentally to fire on the lock-gates at close range. I had no intention of wasting valuable lives on attempts to block the canal, a project that, with the exception of possibly damaging the lock-gates, could not achieve useful results. I therefore worked hard and elaborated a scheme of landing on the mole, which should have entailed the minimum loss of life.

During the autumn the Admiralty sent me a scheme for blocking the Zeebrugge Canal, that had been evolved in a back room in London, on which they asked me for my opinion. It was marred by the very mistakes that might have been expected from men who had had no experience of operations off the Belgian coast. The attack was to be in daylight, from which it was evident that the originators knew nothing of the accuracy of fire of the batteries. Merchant ships with slow speed were to be employed to block; when at least sixteen-knot ships were necessary to give any chance of success. There was to be no gunfire attack on the lock-gates. The mole was left unattacked, and consequently the batteries were left undisturbed to fire on the blocking ships, and the destroyers that were alongside the mole were likewise left in peace. If they had had steam up they could easily have sunk the blocking ships as they passed the mole-head.

I was very busy at the time; and, like St. Paul, I did not endure gladly those who produced unworkable schemes. My strictures on the proposals were therefore much to the point. However, the scheme did include one good suggestion, and that was to block Ostend at the same time as Zeebrugge, not that dumping down ships could block either port; but if a blocking attack was made at all it would be as well to attack both places. I subsequently attended a conference at the Admiralty at which Rear-Admiral Roger Keyes, who afterwards relieved me at Dover, was present, and explained to them my proposals and the reasons for the

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arrangements which I had laid down as being essential to success.

I have already written so fully in my previous accounts of the work at Dover[1] of the attack that was carried out on the Zeebrugge mole after I left the command in March 1918, and have shown the reasons which, in my opinion, caused that attempt to end in disaster, that I will not once more traverse this old ground. In fact, it would not have been necessary to deal with the subject at all had it not been that lately (May 1939) attempts have been made by articles in the Press to advocate inshore and landing operations in the Baltic. And, extraordinary to relate, the Zeebrugge failure has been called on in evidence of the probable success of such attempts!

That the testimony given by the Zeebrugge raid affords a direct negation to the thesis is evident if we consider the results attained by this raid. These briefly were:

The canal was never blocked.

The lock-gates were never attacked, but were actually defended by the blockships against any future attack.

No damage was done by the mole landing.

The destroyers were not captured nor even attacked.

The British losses were: 214 killed, 383 wounded, 19 prisoners: total, 616.

The German losses were 10 killed, 25 wounded: total, 35.[2]

I doubt if the writer or writers of the articles referred to above have ever had the task of making out operation orders for such an operation; or ever have appreciated the great complexity of the disadvantageous circumstances that would attend such an attempt.

There is little danger of such an affair being sanctioned by those who are responsible for the conduct of a war; but there is a very real danger in educating the British public to look forward to operations which appeal vividly to the

[1] *The Dover Patrol*, 1915–17, and *The Concise Story of the Dover Patrol*. Hutchinson.

[2] The figures of the German casualties were obtained for me from the German Admiralty through the courtesy of the German Embassy in London.

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imagination; but which under normal conditions cannot wisely be undertaken. We suffered enough, goodness knows, during the Great War from the fact that Nelsonian fleet actions had led to the belief that the German Battle Fleet would be swept off the face of the sea the moment that it poked its nose out of harbour. When this did not come about, discontent and disparagement of the Navy resulted. It would be a thousand pities if the public were educated to look forward to a class of operation that most certainly, under normal conditions, will not materialize.

Let me warn the average lay man who does not possess naval knowledge to treat with considerable suspicion ideas as to uses to which our fleets should be put in war-time, other than those honoured by time and custom, unless those practices have received the sanction and blessing of the British Admiralty.

Now for a few remarks on the subject of preparing war plans. The preparation of naval orders for coastal operations differs from that of military orders for land operations, in one important particular; namely, that on land, local topographical conditions, and the local defences of the enemy are best known to the officers commanding the front-line sections at the places where the attack will be launched; whereas, at sea, these local conditions are best known to the supreme command, since all reconnaissance reports come direct to the Admiral and his staff; and the officers who will command the various units of the attack, in all probability, have never seen that portion of the coast against which the operation will take place. For this reason, suggestions from the units at the front must form the basis of shore operation orders; but, in the Navy, the inception of orders should come from the Admiral and his staff.

There are several ways in which naval plans for an operation can be prepared. An Admiral, if not conversant with the peculiarities of all the craft under his command, or if lazy, can turn the work over to his staff; or he may call on the officers in charge of the various units to prepare their own orders, and forward them for his approval.

When preparing the orders for an operation (several of which involved the use of a hundred or more vessels) I invariably, in order to prepare my mind, first wrote an

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appreciation of the general reasons which led to its inception. Having done this I determined which were the fundamental points, which had at all hazards to be adhered to, and those which were subsidiary to the undertaking and could therefore be modified or if necessary abandoned.

I then put myself mentally in the position of the officers who were to command the various units and minute by minute visualized the progress of the operation; thus arriving at the aids which it was necessary to improvise and provide to enable each officer to carry out his orders. It was then necessary to place myself in the position of each officer to whom special duties had been assigned, and similarly to visualize his difficulties and how they could be minimized. These were not difficult matters, since my previous career had given me experience in practically all classes of vessels and with all the material, guns, torpedoes, mines, etc., in use in the Royal Navy.

Having thus envisaged the operation and constructed a time-table for all the units, I put myself in the position of the officer commanding the enemy's forces and considered how his dispositions might embarrass the operation.

This was a matter which required not only considerable care but also a general knowledge of the mentality of the enemy, and here it was that experience in the command came in. A mean line had to be struck, so as not to give too great or too little acumen to my opponent.

By carrying out this survey it was not difficult to see that many possible acts on the part of the enemy could be provided against without overloading the scheme with precautions. These were then incorporated. There were sure to be several such acts which might endanger the scheme and against which satisfactory provision could not be made. The probability of these being adopted had to be assessed, and on such assessments the question whether the whole scheme or certain parts of it should be abandoned had then to be decided.

In a complex scheme such as the attack on the mole and the placing of blockships in the channel leading to the lock-gates, one portion of the attack might be countered by the enemy while the others might succeed. It was necessary therefore to consider how much premature discovery and

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local defence might affect each portion, and in such an event which of these portions of the attack should be proceeded with at all hazards, or if any should be abandoned. It was infinitely more satisfactory to arrive at these crucial decisions in a calm atmosphere, when there was no hurry or distraction, than to leave them for decision in the heat and flurry of an attack. Moreover, the officers concerned could be given guidance in advance to regulate their action under conditions of surprise. Having done all this, I then consulted my Chief of the Staff and took him through the proposals and received his considered opinion after he had had time to digest the subject. Then the officers of the units were interviewed and their opinion consulted and suggestions asked for.

After this the detailed orders were drafted by the Chief of the Staff, and submitted for my final remarks.

The main reason for this personal work, which ran into hundreds of hours of thought, was that I obtained a far better grasp of the details of the whole operation, and of the reasons for the particular dispositions of each unit, than I could possibly have possessed if all these details had been presented to me in their final shape.

It must not be forgotten that unexpected developments may occur during an operation, when an admiral may be called upon to give an instant decision. It is therefore necessary that he should have clearly in mind, not only the whole dispositions of the ships, but the reasons underlying the particular arrangements that have been adopted. Another advantage of this method is that, when discussing the arrangements with the officers in charge of each unit, his mind will be fully prepared, and he will be able, immediately, to assess the value of any suggestions that may be suggested by them, for the alteration or amendment of the plan.

It will be seen that this method of evolving plans places the responsibility of failure (except in cases of disobedience or misconduct on the part of a unit) where it should rest, namely, on the shoulders of the Admiral. He must take responsibility for any oversight, and cannot subsequently shuffle off blame on to the shoulders of a subordinate.

I continually impressed on my officers the vast impor-

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tance of schooling themselves by constant thought, so as to be able to act promptly and correctly in cases of emergency. I urged the captains and officers of the watch, when on deck, suddenly to ask themselves: 'What should I do if I sighted a submarine on the bow, beam, quarter, or any bearing—should I put the helm over and how much? Should I go full speed or reverse a propeller? Should I use gun-fire or a depth charge? etc. etc.' And similar questions as regards sighting vessels or enemy destroyers. The result of such preparation would be that when anything out of the usual happened, even should it not be exactly the same as that which had been visualized, yet it was certain to be so similar that instant and correct action would instantly have followed.

I have been told by Admiral Sir Edward Evans that it was by following this precept that he was instantly able to determine the correct action. That led him to ram the German destroyer in the gallant action in which the *Broke* and the *Swift* took part off the Goodwin Sands in April 1917.

There is one part of the Zeebrugge operation as carried out to which I feel bound to refer. The *Vindictive* did not, as might well have been foreseen, hit off the exact spot at which the orders laid down she should have disembarked the landing party. It is not easy to see what virtue attached to the ship being in this *exact* place. In fact, the position that she did actually take up, viz. less than two ship's length to the westward, sheltered her and her assisting craft more effectively from the fire of the mole-end battery than the one originally selected. This was advantageous rather than detrimental; especially as no attack was incurred from any guns that might have been installed to the westward. It would have been unnecessary for me to have mentioned this small displacement in position if it had not been that Captain Carpenter, the Captain of the *Vindictive*, has been severely criticized, and the failure of the landing ascribed to this slight displacement of the *Vindictive*. If this had been the true reason, the question must arise as to whether it was justifiable for an admiral to risk so many valuable lives if the success of an operation depended on positioning, with such extreme accuracy, a ship at night-time, on a curved mole

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one and a half miles in length. I must confess that the criticism appears to me to rest on an unreasonable assumption, and to be both unfair and unchivalrous. A more gallant attempt was never made by any man under conditions so trying as those experienced by Captain Carpenter—conditions the difficulty of which, even in peace-time, are apparent to any officer who has been accustomed to similar work of going alongside a jetty in a tideway on a dark night without lights or help from the shore. It is little wonder that in the ballot for the award of a V.C. as originally taken Captain Carpenter headed the poll by seventy votes.

I have been criticized freely, and have incurred considerable odium, by pointing out in the books I have written the failures in the planning of the Zeebrugge raid. I am impenitent. I have been told that the success of the attack heartened the people of England and our Allies. I agree that the *published account* did both of these things, but it was not the success of the attack, but the account issued by the Admiralty that accomplished these two very desirable results.

Let us see how the Admiralty stands in the matter. They knew from my reports, both written and verbal, that it was impossible to block the channel. The reasons I gave were incontrovertible, yet they published a report saying that the channel had been blocked. Surely before making so definite a statement, which they had good reasons to believe could not be accurate, they might have waited to see how the photographs showed that the impossible had been attained. This, however, was not done: several good reasons can be advanced for their precipitancy; but it is never wise to speculate on the possible reasons that guide the actions of others.

But there is, however, one very bright spot as regards this undertaking which almost obliterates its many defects, namely, the gallantry and devotion of the men who carried out the enterprise. I know well the difficulties under which they suffered and the coolness and nerve they had to display; the *élan* which those who gained the mole must have displayed, and the heroism of those who fell to the enemy's shell while in the *Vindictive*. It is impossible to think of, and picture, that night, as I can do from my

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experience of those waters, without paying a heartfelt tribute to all who took part in that gallant venture.

I can never think of the Ostend attempt without a sense of shame. To think that we had for three years worked off Ostend, and then, on the only night on which it was necessary to find the entrance to the harbour the Dover Patrol had, so to speak, mislaid the place, taken in by the booby trap of the position of the light buoy having been altered by the Germans.

In planning operations on the coast I always made provision for checking the position of the ships independently of the buoys. In the proposals for the Great Landing I checked the position of the monitors by the 'taut wire process,' and after leaving Dover, in a short memorandum which I wrote, I particularly mentioned the necessity for checking the position of light buoys and suggested the methods by which this should have been done.

When it was decided to attempt to block Ostend the method I proposed in 1916, and which is shown diagrammatically on the woodcut (page 399), should have been used. There is a fundamental difference between blocking a channel like the one at Zeebrugge and closing the passage between estacade piers at the entrance to a harbour. In the former case the banks shelve, therefore there is a margin of shallow water at the edges of the channel. In the other case the water is fairly deep right up to the concrete on which the piers are erected. In this latter case two ships can temporarily block the entrance.

Briefly, the essence of the method was to employ three ships, two merchant blocking ships and the *Apollo*. The two blockships were laid alongside, bows to stern, of the *Apollo*, one on each side. (Fig. I.)

The *Apollo* steamed astern, the two others steamed ahead, and in this manner proceeded between the estacades to the spot where the blocking was to take place. The stern ropes of the block ships were then cast off, and the *Apollo* steamed ahead. (Fig. II.) This threw off the sterns of the blockships, jammed them hard against the estacades; and the hawser, which was rove as shown in the diagram, brought the bows of the two ships together.

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The hawser parted under the strain (or was slipped) and the *Apollo* proceeded home again. (Fig. III.)

It was, of course, hopeless to attempt to close Ostend with a single ship on an ebb tide, unless the rather difficult manœuvre of going astern and grounding the stern of the blockship first was resorted to. The blocking should have taken place on the last day of the flood, which again would have neutralized the water released by opening the gates of the *basin de chasse*. But the two-ship scheme had many advantages; not the least of which was the protection given to the centre ship by the vessels on each side of her.

I pointed out to the Admiralty when I discussed the impossibility of blocking Zeebrugge that, even if a blockship were placed in exact position, modern engineering, by the use of oxy-acetylene burners, could remove the upper works down to low-water mark in less than ten days. A passage for submarines and destroyers would therefore be provided within this time. The same applied to ramming the lock-gates. Even if a ship had been wedged in the lock entrance, not more than three weeks need have been required to remove sufficient of the upper works, by flame and small explosive charges, and to cut a passage down to low-water mark. The far caisson would still have been operative. I always looked on the second caisson as equal in importance to the northern locks; and considered that unless both caissons could be destroyed, and the canal dried (when the sun would have cracked the bed and made it leak), the use of the canal could not have been denied to the enemy. Further, there was always the Ostend exit available.

There is, in my opinion, no justification for *unnecessary* loss of life in war-time. Thought should always be directed to minimizing casualties; loss of life must occur, but often thought will save hundreds or even thousands of lives.

Plans to attain a common end, if made by different individuals, vary; some see only the ultimate aim, and go for it like a bull at a gate. They may obtain their object, but this method may be the cause of considerable loss of life. In fact, the bull, on its way to the gate, generally creates havoc in the china shop! Others, unfashionably, look on war as largely a matter of business and of calculation, when every step and every avenue leading to the desired

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result should be carefully and minutely explored in advance, and every eventuality, so far as possible, foreseen and allowed for. There is nothing brilliant in this, and probably little glory will accrue in the final development, because the affair seems to have been one of great simplicity. I may be wrong, but I am fully of the opinion that, had I not expended hundreds of hours of thought on the various operations at Dover, we might have suffered heavy casualties in our coastal undertakings, and our traffic and transport services might have suffered far greater losses than was the case. But all the various services worked so smoothly, so few merchant vessels were lost, and our trooping transport was carried out with such complete immunity that there never seemed to have been any danger present, in spite of the fact that all these services were run only seventy miles from Ostend, the German headquarters on the Belgian coast.

If the transports had been run at night, if the traffic had not been constricted to a narrow channel, if the lights of merchant vessels in 1917 had not been extinguished, if the 6th Flotilla had not been worked to the bone, if the Belgian Coast Patrol had not been instituted to hide the weakness of the Dover Patrol, and if a dozen and one other details had been left to chance we might well have suffered severe disasters to our cross-Channel and other traffic. But all went so well that no one ever stopped to think what might have happened if these minute, and utterly drab, details had not received attention.

If I had not invented and insisted on laying the Folkestone barrage, the stoppage of submarines using the Straits in 1918 would never have taken place. There was no glory in the drama we enacted in the Dover Patrol, but only constant thought and hard work. The public which formed our gallery was not pleased. They wanted spectacular action, without considering whether such action would or would not further the interests of the country, or help us to win the War. The populace wanted excitement, and the Press head-lines. So long as I was at Dover they did not get either, but what they did get was their food and supplies, and the defeat of the German schemes, as far as the Dover waters were concerned, with the minimum loss of life.

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In October 1917, after Sir Eric Geddes had appointed a Barrage Committee, the sad part of my time at Dover commenced. Instead of the old cordial relations continuing between the command and the departments whereby so much good work had been ensured in the past, delays in correspondence and the supply of material which I considered to be urgently required crept in, and the work of the War was consequently delayed.

Take one example: I knew from three years' experience what was the correct way to light and protect the mine barrage—which I had laid. Nor was the mine barrage my only preoccupation: I had the whole of the shipping and thousands of tons to protect daily. The Barrage Committee had no experience of the Channel, nor of previous raids. My scheme was blocked and their ideas approved. Their eyes were concentrated only on the mine barrage, and knew nothing about traffic protection and the various transport services. Yet they succeeded in having orders transmitted to me as to how I should dispose the vessels under my command! These I fought tooth and nail, as they seriously reduced the protection necessary for the shipping. The scheme which was ultimately adopted for the patrol of the barrage, after I had left the command, gave, as I had foreseen, insufficient protection to the patrol vessels, and a very serious raid on the patrol line took place. In the end my methods of lighting and protecting the barrage had to be adopted.

I had experience and knowledge of what was required; the Barrage Committee had no such experience, and merely worked on theories of their own. I had the full responsibility for the conduct of the War in the Dover area. The committee had no responsibility. If a disaster had occurred I should have been held responsible—not a committee, which, as Sir John Fisher remarked, 'had no body to be kicked or soul to be damned.'

All this was the result of a First Lord, with great experience of railways but none of a fighting Service, appointing a shore committee practically empowered to interfere with a sea command. Let us hope that the events of 1918 will be a warning to high Admiralty officials not again to try such a disastrous experiment in war-time.

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And what was the conclusion of the whole matter? Well! In December 1917 I was removed from my command. As regards this I have no complaint. The Admiralty have a perfect right to change the employment of officers, or to dispense with their services; but what I did, and still do, take exception to was the brutal way in which it was done. As early as October 1917 I had been warned that a clique at the Admiralty were anxious to have me superseded and their own nominee appointed. I had been told privately, though not by the First Sea Lord, who knew nothing about it, who my successor was going to be. So far so good. Ten days before I was superseded I saw the First Lord, who, at the close of our interview, expressed the hope that Dover and the Admiralty would continue to co-operate closely. A few days later Sir John Jellicoe was removed from the office of First Sea Lord and I was superseded. Again I had no cause for complaint. But, in my removal, and afterwards, the Board of Admiralty then in office did everything in their power to make my removal as bitter to me as possible. It is usual after an officer has vacated a high command for him to be received by the First Lord and thanked for his services. I was not favoured with such an interview. It was also the established practice of the Admiralty under these conditions to write to the Admiral expressing the appreciation of the Board for his services. This letter in itself means little; but its omission means a great deal. This letter was never sent. Again, under these conditions, it is usual for the Admiralty to ask His Majesty graciously to receive the officer vacating a high appointment. As this was not done I suggested that the omission should be rectified. I was told that the Admiralty did not intend to do so.

When the history of the Dover Patrol during the years of my command was written by the War Staff at the Admiralty I was neither consulted nor shown proofs. When I asked for a copy I was lent one, being grudgingly told that I must return it within a month!

Of course, excuses can be made for the chagrin and jealousy caused by a retired officer like myself being given an important command. It is also not difficult to appreciate that, having superseded me for no valid reason, a weak

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Admiralty did not wish to pay tribute to the results which had been achieved at Dover. But that they should have deliberately acted in a manner that showed unmistakably that they looked on me and my work as having failed, and so denied me the ordinary civilities which were accorded to other officers of high rank, showed a pettiness that is lamentable though perhaps not inexplicable.

Those who read this short summary, and who have also read the record of my stewardship at Dover, either in the two volumes or the single volume edition, will be able to judge whether my work merited such treatment, and I am content to leave the verdict in their hands.

Little wonder that after these insults I retired from contact with the Navy, and never since, with the exception of the dedication of the Dover and Dunkirk war memorials, and of acting as one of the pall-bearers at the funeral of Lord Fisher, have I taken part in any naval function or reunion.

Such indeed was the unfortunate ending to nearly forty years' strenuous work in a Service which I loved, and to which formerly I had been proud to belong.

In 1934 a more generous Admiralty and appreciative First Lord awarded me a good service pension, which I accepted with pleasure, as evidence of official recognition of my past service in the Royal Navy, but even this tardy recognition can never efface the memory of the treatment I received in 1918.

I cannot end this chapter without paying a tribute to the work done by the women at Dover during the War. Committees were formed for war work, and much sad work fell to the wives of officers who had comforted and helped the widows of men who lost their lives in the command.

They endured the fairly frequent aerial bombardments with fortitude, and remained with their children to look after the well-being of their husbands. We took in one Belgian refugee, Miss Edith de Maistre, who formed a companion for my little daughter. The children were most careful that their dolls should find shelter with them in the lower rooms of the house during raids—evidently developing the maternal instinct at an early age.

In order to keep my servants throughout these trying

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times, I offered each one a 50 per cent bonus on their wages, to be paid at the conclusion of the War, if they remained throughout the whole of the time in my service. One only succeeded in claiming the reward.

The memory of my time in the Dover command remains ineffaceably happy owing to the pride of my having commanded for three years officers and men of all ranks who rose so nobly to the calls made on their stamina and courage; and who proved themselves more than mere worthy successors to the long list of naval men who throughout centuries had fought and upheld the security and sea power of our country.

It is a wonderful thought that the men hauled in by so widely cast a net as that which created the Dover Patrol, men of all trades and occupations, a few from the Royal Navy, fishermen in numbers, and again many without sea service or education under discipline, should one and all have proved so staunch and true. They formed, as it were, samples of the varied manhood of the country. Surely, since these samples proved so markedly their sterling worth, it is no wonder that the manhood of our nation and Empire proved itself invincible in war.

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Chapter XIV

THE MINISTRY OF MUNITIONS

THE INVENTIONS DEPARTMENT OF THE MINISTRY OF Munitions was indeed a novel institution. It had its origin in a widespread feeling that inventors were a downtrodden lot, and that the official attitude towards them was frigid and unsympathetic. Anything farther from the truth cannot well be imagined. The real truth is that inventors, as a class, are largely visionary and unpractical gentry, who have an undue belief in their own conceptions. Moreover, in many cases, they start to invent appliances without any idea of the practical conditions under which the manufactured article will be called upon to work, and for this reason their inventions usually fail in practical working. It is, of course, common knowledge that useful inventions have been turned down for want of financial backing. Take, for instance, the two classical examples that fell to the lot of Mark Twain. This unique personality was innocent of all mechanical and scientific knowledge; but, because of his popularity as an author, was often approached by inventors, a class of person for whom he had a rooted aversion. On one occasion he was approached by a man who promised to make light from electricity inside a glass bulb, but he was promptly sent away. His name was Edison. Hence one fortune was missed. On another occasion he watched a little man walking away from his house shaking his head and muttering to himself. This man had tried to interest him in a method of sending messages vocally along wires. He had left behind him his card, on which was the name Graham Bell. Thus were lost two opportunities which do not fall to the lot of the ordinary man.

Analogous to these are the refusals of manuscripts by publishers. The *Scarlet Pimpernel* was refused by all the large publishers in London, until one man, in a small way,

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at last condescended to publish it. It has since run into over a million and a quarter copies. *Lorna Doone* likewise made no headway until Princess Louise, the daughter of Queen Victoria, married the Marquis of Lorne; when the similarity between Lorne and Lorna caused a few people to read the book, after which it went like hot cakes. Incidentally, I remember that at the time this marriage was on the *tapis* a suggestion was made, I think by *Punch*, that 'a suitable wedding present for the Princess would be a mowing machine to keep her Lorne in order!'

It was suchlike happenings to inventors which stirred up public opinion and caused the British public to take steps to ensure that inventors received proper attention.

The question of hurry was of importance, more so than is usually appreciated, for it often takes some twenty or more years before adaptations of a new principle become of general utility. The use of steam pressure to produce motion dates from 1763, but it was not until 1830 that locomotives were used for passenger traffic.

In 1805, while Trafalgar was being fought, a steamboat was navigating the waters of the Clyde. Yet sail power as an auxiliary to steam was not abolished in mail steamers for some sixty years, and in the Royal Navy for eighty years after that pregnant date. Gunpowder was invented in the eleventh century, but more than four hundred years later, in Henry VIII's reign, bows and arrows were still the main long-range weapon; and, even later, at the Battle of Flodden Field, the skill of the bowmen determined the victory.

The dynamo was invented by Faraday in 1831, but hardly a single town was lighted with incandescent lighting in 1885. Anent this, I remember a scientist writing to the papers to say that he had travelled from Paris with an accumulator battery. His parcel therefore had contained a large number of potential ergs. An unfeeling confrere replied that the same would have been the case if he had been contented with carrying a lump of coal in his pocket.

The electric telegraph is another example of the time it took, after Volta had invented his voltaic pile, before the transmission of telegraphic messages became a commercial practice.

Adaptations of principles are apt to multiply exceedingly,

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and it was with a view to hurrying up such developments and sifting the wheat from the chaff that the Inventions Department of the Ministry came into being and did excellent work throughout the War.

One particularly good innovation was that the Controller of the Department was given the power to spend money to assist an inventor, or on the development of an invention, without having to obtain Treasury sanction. It was against all precedent that a department, or a person, should be accorded such financial independence. Naturally, those persons who successively held the post of Controller were most zealous guardians of the public purse; there were no extravagant payments; but it was of great advantage to be able to afford quick financial help towards the development of promising ideas. Moreover, such powers are, in reality, an economy, for they place the Controller in the position of paying out money as required, and ceasing supply when, in course of development, the ideas proved to be of little or no use; whereas, had it been necessary to obtain approval before expenditure could be incurred, the Controller would naturally have been obliged to ask for a large sum to cover possible eventualities; and, when the money had once been approved, the same economy in its use might, quite possibly, not have been forthcoming, for there is naturally a rooted disinclination to return to the Treasury any portion of a sum of money that has been extracted with difficulty from that financially close body.

It is impossible in the space of a chapter to deal at all satisfactorily with the work done by the department during the War, or even during the year I held the office of Controller. The latter, if dealt with fully, would occupy a greater space than the volume I am now writing. All I can do is to give a bare outline of the organization, and then add a few general remarks on the work which was undertaken.

Briefly: the organization consisted of four main branches under a Controller, these were: (1) pure research, (2) experimental stations, (3) work section, (4) patents and awards.

The pure research section dealt with all inventions. It was divided into twelve sub-sections, each controlled by a technical examiner, generally a man who had been trained

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in the Patent Office. Each sub-section dealt with specific classes of inventions—motors, gun sights, philosophical instruments, gun ammunition, anti-aircraft guns, artificial limbs, chemical inventions, etc., etc. All inventions and inventors were at once attended to by the proper examiner. After a preliminary investigation the invention was either rejected as useless, or considered to be promising. Any invention that was considered to be of value, or even of doubtful value, was then placed by the examiner before a panel of experts. This committee was entirely of an honorary character, the members giving their services voluntarily,[1] and here let me pay a tribute to the importance of the work performed by its members, who devoted a considerable amount of their valuable time to furthering the work of invention during the War. The function of this panel was to decide which of the following conditions was satisfied by each invention brought before them—whether :

(1) It warranted introduction to departments of the Ministry of Munitions or War Office.

(2) It was worth developing further through the media of experimental grounds, workshops, and laboratories before submission under Clause (1).

(3) It was worth circulating to interested departments and firms, through the medium of the journal.

(4) Whether noted for post-War consideration.

Selected cases were sent out by this committee to other departments of the Ministry, the War Office, G.H.Q., France, and to liaison officers with the Allied Governments.

The results of the findings of this panel and their recommendations then went to the Controller, who determined if it was necessary for a grant-in-aid to be made. If further experiment was necessary it was forwarded to one of the experimental grounds for report. If the invention was merely in the sketch-design stage, the design department completed the design, and arrangements were made for manufacture. When ready, if necessary, the finished product was sent to the Army in France for further trial, and if

[1] See Appendix II.

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satisfactory supply was turned over to the proper supply department of the Ministry.

The personal and sympathetic contact between the examiners and inventors was most useful. Any inventions affecting the Navy only were sent to the Naval Committee of Inventions and Research. Everything affecting explosives was sent to the Explosive Committee presided over by Lord Moulton. In addition, a committee investigated the problem of fixation of nitrogen from the air, a matter that was becoming urgent on account of the difficulties of obtaining manures. The whole of the experimental work of the department was under the able direction of Lieut.-Colonel C. A. F. Osmaston, C.B., R.M.A., and included the stations at Claremont, Imber Court, and Chattenden, as well as the military staff at the Ministry who dealt with military matters.

The Works Department which was responsible for the maintenance of all buildings and machinery was under the guidance of Mr. E. Lacey. The ramifications of the department were really extraordinary. I have, as an example, included a list of the personnel of one branch, that of the anti-aircraft defence.[1]

The Ministry of Munitions was a vast organization, the extent of which has never been visualized by the majority of those who clamoured for its re-institution in 1938. It could not exist without such autocratic powers as would never be conceded in time of peace. The best solution for its creation is, in my opinion, that put forward by me before the Arms Committee, namely, to keep together a skeleton organization in peace time which could be expanded sectionally at the commencement of a war.

I find it perfectly impossible for want of space to pay an adequate tribute to the work done by the whole of my department, which numbered some three hundred and nine persons. Of these, one hundred and fifty-one formed the technical staff. I must, however, mention the work done by my immediate predecessor, Colonel Sir Hamilton Goold-Adams. I had merely to take up and carry on the work as he had left it, and make such alterations as, in process of time, were shown to be desirable. We were fortunate in retaining his

[1] See Appendix II.

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services on the advisory panel and as chairman of the Nitrogen Products Committee. But the smooth working and efficiency of the whole department was undoubtedly due to his tenure of the post of Controller. Then as Assistant Controller we were fortunate in having Major W. H. D. Clark, O.B.E. I cannot speak too highly of the general assistance he afforded me or of his tact and his value generally to the department. In an appendix I have included the names of the advisory panel, also of the examiners in recognition of the work done and time expended by them in the furtherance of the War. So far the only record of their work lies in a pigeon-hole in some dusty repository of forgotten archives. We owe our present knowledge of anti-aircraft defence and detection to Professor A. V. Hill, F.R.S., and his assistants, who did invaluable work on range tables, fuse settings, acoustical detection of aircraft and many other mathematical and practical details. Colonel Spencer had a difficult task in proposing rewards for inventors, a work eventually taken over after the War by a committee with a Judge of the High Court as chairman. Colonel Osmaston, Professor Laurie, and many other names crowd into my memory; but I must end, otherwise this chapter will read like a page of *Who's Who*. But just two more must be mentioned. There was my private secretary, C. H. Crombie, M.A., who hailed from New Zealand, and proved not only a charming secretary, but a sure shield and buckler against the bores who invariably try to invade the offices of busy men. Then lastly, Major A. E. Moore, who fulfilled the onerous duties of secretary of the department.

One of the pleasures, but also one of the difficulties, in writing a book of reminiscences is that one's mind becomes invaded by memories of those who worked and helped to make the daily work a success. It is a pleasure to remember old faces and personalities, but it is also difficult to do justice to their help without boring readers who know neither them nor the assistance that they rendered.

One other activity of the department deserves mention, namely, the issue of a monthly journal, which gave an account of the principal inventions adopted, and those which were recommended to the notice of manufacturers in case they might prove useful to them. Mr. Dendy

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Marshall was largely responsible for the production of the journal, which I believe was of distinct value to the manufacturers of the country.

As I have before indicated, a vast proportion of inventors, say 90 per cent, are cranks. That is, they have little scientific or mechanical knowledge, and therefore have no solid standpoint from which to view ideas that may enter their heads. They do not appreciate that 'principles' are rarely invented. The useful invention is most often, but not always, merely the adaptation to some want, in a novel way, of some well-known principle. The best example of the invention of a principle is that whereby perforations were used for the easy subdivision of pages of postage stamps. In fact, this invention combined every virtue. It was simple, cheap to put into use, novel, and fulfilled a want felt by millions of people daily, and which could not be satisfied by any other simple method. On the other hand, it has been truly pointed out that the steam-engine never was invented. The use of steam to give power to mechanism started with the idea of condensing the steam, thus producing a vacuum and allowing the pressure of the atmosphere to do the work. During the next one hundred years improvements crept in, the steam itself was made to develop power; and, in every succeeding year, small modifications and further refinements were introduced, until the present turbine marks the apex of steam propulsion. The invention of the link motion, which was, perhaps, one of the outstanding improvements in locomotive engines, was due to a lazy boy noticing that the rope which he had to pull in order to operate a valve, required a tug as a certain part of the machinery passed close to him; so he hitched it on to that part, and made the engine automatically do the work which he had been paid to perform.

Most of the useful inventions are, in these days, due to people who possess special knowledge, either draughtsmen, mechanical engineers, or scientists, or to those who discover the need for an invention during their practical work. The average layman has but a poor chance of making a valuable invention.

There are men who style themselves inventors whose business in life is to invent. These rarely cut much ice.

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Of these latter the late Mr. Brennan was a typical example. He invented the Brennan torpedo which was dirigible and travelled at quite a high rate of speed under water, by virtue of the same principle that a reel of cotton on the floor will travel away from the direction in which the cotton is pulled. The torpedo was a success, until increasing gun-range rendered useless any weapon which had mechanical connection with the shore. He invented the monorail and a helicopter, but these were of no practical value. He was a good example of a genius whose energy was largely wasted for want of concentration. There are, however, hundreds of so-called inventors who have neither genius nor practical knowledge, whose minds are queerly warped and whose ideas are eccentric.

I will give a few examples of the most impossible of the suggestions received at the Inventions Department.

It is not easy to decide which of the following three inventions should be awarded the first place in the hierarchy of lunacy; but I will not err greatly if I give pride of place to the man who suggested freezing the clouds and mounting machine-guns on them in order to destroy Zeppelins. He made the suggestion in a perfectly serious manner, and probably still considers that air raids would have been stopped if his idea had been adopted.

The second proposed to use trained cormorants to peck out the mortar from the chimneys at Krupps' works at Essen, and so impede the manufacture of German war material.

This is only slightly more absurd than a proposal that found favour with men in high places during the War, and which I am informed was, actually, put into practice, namely, to try to teach seagulls to perch on the periscopes of enemy submarines, and so give away the position of these vessels. I believe a school for seagulls actually, at one time, existed. I can only hope for the sake of our international reputation for sanity that this was not the case; however, I fear it is only too true.

The third volunteered to produce a wind, at two hours' notice, from any desired direction, and so blow gas over the enemy's trenches. In an airy way he said: "Let me know at 8 a.m. in which direction you want the wind to blow, and

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I will arrange for this to be so by 10 a.m." This last inventor was so angry at having his capabilities doubted, that he reported me as being obstructive to the conduct of the War to the Minister of Munitions, the Secretary of State for War, the First Lord of the Admiralty, and the Prime Minister!

These three were by no means the only absurdities with which we had to deal. One man proposed using a 'black ray' to neutralize moonlight. What a 'black ray' was, or how it was to be produced, he would not divulge. Another proposed to effect the same purpose by using a huge balloon to hide the moon from the earth.

The mention of rays reminds me that there was also a man in France who invented a death-ray, called, I believe, the 'green ray.' This was seriously followed up by G.H.Q.; for, after all, such a method of killing was by no means outside the range of possibility; but the killing never came off.

Perhaps one of the most hackneyed ideas was that of using one shell inside another, with the view to the outer one acting like a gun; and, after it had travelled some distance, firing the second shell from its interior. By this means it was hoped that increased range would be obtained. This is an excellent example of the confusion of thought so often to be found in the brains of an inventor, since the primary use of a shell was quite lost to sight. The fact that a shell was intended to carry a destructive bursting-charge was ignored; and that in this shell such a charge must necessarily be reduced to microscopic proportions never worried the inventor. He may be forgiven for being ignorant of the fact that at no time in its flight is a projectile pointing directly at the object aimed at; so its little son, grandson, and even great-grandson (for some inventors did not stop at one parthenogenous delivery) would start life while pointing in a completely wrong direction. Another very favourite idea was to fire germs and microbes into the enemy's lines; and one bold genius even went so far as to suggest using a pneumatic gun to deliver a shell full of poisonous snakes into the opposing trenches.

To many hydrogen gas appeared to have the power to lift enormous weights. Several times we had the suggestion

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put forward to suspend heavy guns below balloons, then carry them over the enemy's lines and fire them from that precarious position. One visionary even suggested armouring the balloons to prevent them from being damaged by the enemy's gun-fire. It never entered the inventor's brain that, leaving the weight of the balloon out of account, it would require over a million cubic feet of hydrogen to lift a modern heavy gun. Moreover, a heavy gun fired from such a position would itself be driven backwards, by the discharge, with a velocity of nearly one hundred and fifty feet a second, which would have produced remarkable results on the suspending wires and the balloon itself.

Perpetual motion was not merely a hardy annual, but a weekly product, and it will always be the pet hunting-ground of the inventor. It is accompanied by a peculiar mental obstinacy. Rarely can an inventor be convinced of his errors. The subject is so fascinating; and apparently so simple. It would undoubtedly succeed if it were not for two things, first, friction, and secondly, that, even if such a machine were produced, it would never do any useful work, being entirely occupied with keeping itself in motion.

Almost every imaginable waste product was suggested as a possible source for obtaining petrol, even down to the grease skimmed off soup. Quite a number of inventors believed it possible to transmit electricity along searchlight beams, either for electrocution or telephonic purposes. This is reminiscent of the Chinese during the Boxer troubles, who spread the belief that, when a ship off Taku worked a searchlight, the Boxers slid down the rays and sank the vessel. Electrified tanks and even bayonets were frequently suggested. In fact, we had a constant stream of electrical and magnetic suggestions in which electricity was assumed to possess the most extraordinary properties.

Then there was the carpenter who invented a packing-case which would be easily taken to pieces and put together; the design appeared excellent, and was much required to save wastage of wood. He was supplied with wood, screws, and all requisites; but, for some reason, he never could make that simple piece of work, but was eternally turning up at the Ministry with some new want or in quest of fresh

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information. This was entirely typical of the class of impotent inventors.

Perhaps the most pathetic case I ever met was not at the Ministry, but when I had charge of the designs of the submarines. I made it a practice never to travel to see inventors. I was far too busy. Yet I was always glad for inventors to bring their ideas to me. But on one occasion I received a letter from a well-known scientist at Cambridge whom I knew asking me to visit an inventor at Brighton. This man could not bring me the models which my friend had himself seen, and considered to be distinctly promising. So I went. I found the house threadbare but scrupulously clean. We passed through a workshop where four of his sons were at work, and on to the long tank he had made in his garden. There were his models. A marvel of model-making, with engines and accessories all to scale. He had developed the idea of fitting a submarine with wings, designed to work on the principle of those of an aquatic diving bird; and he had succeeded. But, of course, the whole system was impossible in practice. The vulnerable area of the submarine had been increased fourfold, for no practical advantage; and high speed could never be obtained by such a system. He had, in fact, wasted years of his own life and also of the lives of his sons, who should have been at school or college, perfecting an invention which any practical naval officer could have told him could never be of the slightest use. I asked him why he went to the trouble and expense of making engines to work his models, when, had he merely told me the dimensions of his submarine and the space available for the engines, I would then have known the horse-power and speed. He replied that unless people saw a model do its work they never believed that it would.

About the same time a man brought me a model of a submarine he had invented; the chief novelty was that it had a bandstand installed on the outside of the hull!

But it is not only inventors who are foolish. On one occasion when abroad I was insistently asked by an Englishman to motor a considerable distance to see models of a submarine and aeroplane. The submarine had an unnecessarily complicated device for admitting and ejecting water to alter its buoyancy. The principles on which the aero-

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plane had been designed, as expounded by the inventor, were merely those well known and actually published in the *Encyclopædia Britannica*. In spite of my telling the man that it was useless to spend money on either of these inventions, he actually did continue to waste a considerable sum.

But I have wandered from the Ministry of Munitions.

Probably the two most important fighting inventions that were made during the War were the Stokes trench mortar and the tank. The former fulfilled the conditions of being an almost perfect invention. A simple tube, on a simple mounting. The shell, which had its charge attached, was slipped into the muzzle of the gun, which, being a mortar, was always fired when pointing at a considerable elevation. When the charge arrived at the bottom of the bore, the cap automatically struck on a nipple and the charge was fired. What could have been more simple or more effective?

The invention of the tank requires rather longer treatment. I happened to know quite a lot about the inception of this machine, as I sat on a committee which I had asked Mr. Churchill to appoint, with Lord Moulton as chairman. We examined the documents and correspondence, as well as the important claimants to the invention, and, in the end, the matter was sifted down to a very simple conclusion. The following are the principal points arrived at by the committee.

The original idea started while Mr. Churchill was First Lord of the Admiralty, when two proposals for trench bridging were suggested. One was a large wheel, rather like the great wheels which were features of sundry exhibitions, but of course smaller. It was proposed that this should roll along with the occupants in seats slung to the axis which remained vertical owing to gravity. The wheel was of sufficient diameter to make a ten-foot trench appear as a mere gutter across its path. The second was my proposal for a tractor to carry a bridge, which I have already described.[1]

In January 1915 Commodore Murray Sueter exhibited to Mr. Churchill an armoured car fitted with a caterpillar

[1] See page 200.

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track. For this the Commodore deserved credit, but the idea was not novel, as such tracks were being manufactured for the tractors of 9·2-inch howitzers and other purposes. So that, while it could not be considered as his invention, its application to a trench-crossing vehicle was certainly a novelty. This vehicle, however, differed essentially from the tank as developed by Sir W. Tritton and Major Wilson, in that the track did not extend materially beyond the vehicle, nor were the ends of the track appreciably raised above the ground.

In February 1915 Mr. Churchill appointed a committee under Sir Eustace Tennyson D'Eyncourt to consider the design of a land fighting machine. An important specification was filed by Mr. Nesfield, and dated June 1915. This he claimed he had brought to the notice of the Admiralty in May 1915. But two important factors to success were missing from the model he exhibited.

(*a*) The oval form of side girder was not foreshadowed; but an abrupt angle was adopted where the rising portion of the track joined the horizontal. This did not allow of the vehicle keeping a considerable portion of the track in contact with the ground when oscillating longitudinally.

(*b*) Rollers were inserted in the track which proved to be inefficient on several natures of ground. The specification should have been very helpful to the committee, but radical improvements were necessary before the suggestions became of real importance.

The next idea came from Colonel Crompton, who proposed a compound vehicle: that is two vehicles fitted with caterpillar tracks, joined together with a flexible joint. This failed under trial, especially in the joint. The large roller tracks which he used were distinctly inferior to the type eventually adopted.

While this committee was sitting a Royal Engineer committee was also at work examining the same question. No real progress was made by either committee until well on in 1915, when it suddenly struck the Admiralty committee to ask the Royal Engineer committee exactly what the tank was required to do. The reply was, to traverse a ten-foot trench and scale a parapet four foot high on the far side. All this time Mr. Tritton, of Foster's, who had helped me with the

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tractors, had been following up the problem and working on it with Major Wilson, the War Office Inspector at Messrs. Foster's works at Lincoln.

These designers submitted a sketch design of their machine in August 1915 and the completed design in October 1915. This machine, called a 'tank,' was first tried in January 1916. The main features of this 'tank' were: (*a*) the oval form of girder; (*b*) that the track was supported by rollers, and did not have rollers in the track itself.

The committee, from these and other considerations, reported that the fact that tanks were available to fight early in 1916 was due primarily to Mr. Churchill, who, although not officially responsible for the production of a land fighting machine, foresaw its possibilities and energetically encouraged and fostered its production. The appointment of the committee under Sir Eustace Tennyson D'Eyncourt marked the commencement of the scientific study and practical development of this machine. The design of the tank when first it went into action was due to the inventive genius of Sir W. Tritton and Major Wilson. This design has only required minor modifications since its first introduction.

The committee also considered that Mr. Nesfield's patent was most suggestive, and could not have failed to help in the origination of the tank; but that there was a wide gap between this specification and the practical solution of the problem. Also, credit was due to Commodore Murray Sueter for first calling attention to the use of tracks on a land fighting machine.

While the committee was sitting, and immediately afterwards, we were bombarded by applications from persons who had helped in the matter. Doubtless, it was true that help had been forthcoming, and energy had been expended by many persons; but it was beyond all doubt that the shape of the tank, which was the kernel of the invention, was due to the above two engineers. Refinements were subsequently introduced. The method of mounting the guns was suggested by Sir Eustace Tennyson D'Eynecourt, and was a replica of that used for light casemate guns in the Navy. But there was still one stumbling block. Caterpillar

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tracks, which were at first used, were discovered to be defective. It was found that the plates when coming into contact with the ground closed up towards each other, picked up stones in the pincer-like gaps, and broke up the track. Even cotton tracks were tried; and, at long last, a track which masked the gap was evolved much like the scales of some prehistoric animal.

The history of one other invention is firmly fixed in my mind, since it showed the danger of uninstructed interference. The invention was strongly backed by a certain organ of the Press; nor was the inventor himself backward in booming his idea. After careful consideration by the experts concerned, the invention, which had to do with anti-aircraft gun-fire, was unfavourably reported on, and I turned it down. The inventor, however, approached one of the Council of the Ministry, who, most improperly, without consulting me, and therefore the experts concerned, promised him a trial of his invention. It was impossible after this to stop the trial taking place, as the Press would have been up in arms. I had to see the promise fulfilled. The inventor was therefore given two guns and their crews for one month to practise his system. The evening before the trials took place my expert in the department asked me if I had considered what would happen if a shell from one of the guns *accidentally* hit the target. The vision conjured up was anything but pleasant. If the accident did happen, we should have had no possible excuse for not adopting the system. We could not argue that his success was an accident, and the Press and the public would without doubt have taken the side of the inventor. The Army would then have been saddled with a considerable amount of useless material, and a large sum of money would have been wasted. Fortunately no accident occurred, and the shell went nowhere near the target in the trials which were conducted. The episode shows what harm a person in authority may do, by giving his consent, or the cachet conferred on him by the office he holds, in matters of which he is almost totally ignorant.

I am reminded of a classic trial that was carried out by the Ordnance Committee, at Shoeburyness, some years before the Great War. Some genius had an idea that it would be a good thing to have a small mounting for a Maxim

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gun carried on the back of a mule. Instead of time being wasted in unslinging the Maxim and its mounting and erecting them on the ground, he suggested keeping the gun permanently mounted on the mule's back ready for instant use. A mounting was accordingly designed and the trial took place. Unfortunately, just as rapid automatic fire commenced, the mule became alarmed, whisked away from the operator and began to career round. Perforce all the august committee promptly fell on their tummies, while a shower of lead swept the air above them and continued to do so until all the cartridges in the belt had been expended. On resuming an upright position, the committee decided to report against the idea. I believe somewhere, hidden at Woolwich, lies a sketch of the event from the pen of a gifted caricaturist.

One fundamental defect in the military branch of the Ministry of Munitions, with which the Inventions Department was associated, was the want of recognition of the necessity for the intimate association of design with experimental work. It was also a fault in the composition of the Ordnance Committee. As I have previously pointed out, I arranged, when D.N.O., for a steel expert to be appointed to that committee.[1] Prior to this appointment the committee was a body entirely made up of naval and military officers. Such a composition was excellent so far as practical knowledge was concerned, but not one of its members had any scientific knowledge of metallurgy or design. In those days, like many other officers, I did not appreciate the importance of expert knowledge in design, or I should also have arranged for a draughtsman of high standing to have been appointed. It would not have been easy to have effected this innovation, as the Ordnance Committee were looked on by themselves, and by others who had served on it, as a very select body; and to have introduced anyone so laic as a head draughtsman would have been looked on as an act of bolshevism. Further, it would have been difficult to have found a suitable man at a salary that the Treasury would have been willing to pay. But my experience at Coventry, of design and manufacture, has convinced me that such a step would enormously increase the value of the work done by the committee.

[1] See page 167.

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The following is an example of the inefficiency of the system then prevailing. When an 18-inch howitzer was required by the Army in 1918, the design section of the Ministry of Munitions was entrusted with its production. The question of design was turned over to the Ordnance Committee, whose members did not include a practical designer, nor anyone intimately acquainted with the details of placing orders for manufacture. The committee therefore called upon Messrs. Armstrong Whitworth to produce a design. One of the rules of procedure of the committee, apparently, was not to examine any design piece-meal, but to wait until the whole design of a gun and mounting had been completed before it was reviewed by the committee. The result was that roughly three months elapsed before the complete design of the gun and mounting could be produced and passed by the committee. After this forging drawings, etc., for the guns had to be got out, and the forgings ordered.

Now note the difference between this and the procedure regarding the 15-inch howitzers at Coventry. Mr. Churchill's order to proceed was given on a mere sketch design. On the morning I received the order to proceed with the design, I went to the drawing-office and gave directions to produce the forging drawings from the sketch design and to allow a quarter of an inch surplus on all surfaces; and that afternoon those drawings went to the forges in Sheffield. While the forgings were being made the complete drawings proceeded. The material for the mountings was ordered in a similar way. The result was that within three months a 15-inch howitzer and its mounting had been made and tested. The comparison between knowledge and ignorance, therefore, was that the 15-inch howitzer was designed, made, and tried in the same number of days that the Ordnance Committee wasted before approving the design of the 18-inch howitzer, and therefore before its manufacture could even be commenced. And this, mark you, was in war-time.

I remember one peculiar experience at the Ministry. One day a lady sent in her card to see me. She opened the conversation by saying that she represented persons who were interested in an invention which at that time was

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before the department. I knew all about that invention, which was one of doubtful value, but no definite decision had so far been taken as to its future. She asked me how it was progressing, and I told her it was still under consideration. She then said that her friends would be very glad to give my wife and daughter new Court dresses if the invention went through, and if I communicated with a firm of solicitors of high standing, the name of which she mentioned. I must say I was completely bowled over. She looked so poor and miserable, that I gave her a severe lecture on the impropriety of her suggestion, and to the penalties to which she had laid herself open, and sent her away. I suppose, strictly speaking, I should have turned her over to the police; but I had not the heart to do this. I only hope that she never did anything so foolish again.

But what afterwards intrigued me, when I came to think over the occurrence, was what part were the solicitors playing in the matter? I cannot believe that any respectable firm would handle such a dirty business. Yet why did she quite calmly mention their names? I rather wish that I had followed up the matter, if only out of curiosity to hear the solicitors' explanations.

Now I come to a difficult point, but one of fundamental importance as regards the Inventions Department, namely, its relations with the Army in France during the last year of the War.

The Inventions Department had three main functions. First, to allay public anxiety *re* inventions; secondly, to supply the Army with novelties and to thrash out any problems that might arise regarding its wants; and, thirdly, to deal with inventions affecting the home front. The first and third were simple, the second presented difficulties because the Army in France had established an Inventions Department of its own behind the lines. There was no jealousy on our part, such a thing would have been absurd. I quite appreciated that such a local Invention Department was of considerable value in solving small difficulties, and devising simple apparatus. Our paramount duty was to be of service to the Army and in no way to hinder; but I was convinced that advantage would accrue if whole-hearted

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co-operation existed between the local department and the Ministry. We had the whole of the scientific knowledge of England at our back, and almost unlimited experimental and manufacturing facilities at our disposal, much more so than could possibly exist in France. What I therefore wished to establish was a complete liaison between the two, so that they should inform us of the work they were carrying out, and of their requirements, and that we should help them in all ways that they might desire. I was anxious to avoid all rivalry and jealousy; with this end in view I visited France, saw the principal officers of the General Staff, and after explaining that the form of liaison then existing did not fill the bill, made suggestions for more intimate relations. My proposals, however, met with no sympathy. They definitely preferred that their inventions officers should work in a water-tight compartment entirely apart from the Ministry in England, with only nominal liaison between the two. This was a standpoint I failed to appreciate, and still consider to have been absurdly narrow-minded. It certainly did not promote efficiency. In future wars, should a replica of the Munitions Inventions Department be brought into existence, there should be a branch of that department located at the front from the very beginning of the war, and this branch should keep up weekly liaison with the parent department in England. It would, for disciplinary purposes, be under the G.O.C. of the British Army; but its work should be helped by the Munitions Inventions Department in England. All work that could be done in France should be done there, but whole-hearted co-operation should exist and complete information be supplied to the Ministry, so that the maximum of aid could be given by that department.

At the end of the War I put forward a proposal, which was favourably received by the Minister, for building a National Scientific Centre. Primarily it was intended to embrace laboratories for all sciences, with living quarters for married and bachelor investigators; but a special feature was that living accommodation should also be built for foreign scientists, who would come by invitation to the establishment as guests. In this way England would, by now, have become the centre of world-wide scientific investigation. The Committee of Scientific Research opposed the idea

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violently, mainly on the plea that they could find far better use for the money. My opinion was, and still is, that they suffered from myopia, and that England lost a magnificent opportunity of furthering international scientific relations.

After the Armistice it was evident that the work of the department was not of a nature required in peace-time, and should therefore cease. It was decided that the majority of the staff should return to their normal employment, that work should be found, if possible, for those who might be in need of occupation, and that a nucleus should remain to turn over current work to the War Office. In December 1918 I was instructed to close down the department by 31 March. This seemed to me to be a reasonable proposition. I therefore called on each section to prepare a scheme for so doing. I was met by a *non possumus* attitude. I therefore issued a memorandum saying that on 1 January I would examine the list of names of those employed in each department, and strike out one-third of these. The men whose names I struck out would leave on 1 February, on which day I would do the same for a further third who would leave on 1 March, and the remainder with the exception of the nucleus would leave on 1 April. Within a week I was supplied with a complete scheme from each department for the reduction within the dates I named. No further action on my part was therefore required.

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Chapter XV

PERSONALITIES

I MET A LARGE NUMBER OF CELEBRATED PERSONAGES DURING the War—and dealt officially with many. In this chapter I have recorded my association with some of these. It is more convenient to segregate these notes, than to incorporate them into the chapters dealing with my war experiences, which would thereby become unwieldy in length, and unduly diffuse. I will commence with His Majesty King George V.

I had been in the *Britannia* at the same time as King George, and we also had been lieutenants together for some months in the *Northumberland* when he had been Lieutenant Prince George of Wales; we therefore had memories in common. Four times I had the honour of conducting His Majesty across the Channel when he visited our armies in France. On the first occasion he graciously sympathized with me over the loss of my elder son who had been badly wounded in the battle of Loos. I then told him the story of how, when very small, his mother had, during a 'Sunday talk,' in order to see how much he had realized of what she had been saying, asked him to tell her something that God had done; without a moment's hesitation he answered: "God Saved the Queen." For Queen Victoria was then alive.

The last occasion that I had the honour of conducting His Majesty across the Channel was shortly after he had met with his serious accident in France. On arrival on board he sent for me and asked what sort of passage it was likely to be, as he feared being ill in his then condition. As a matter of fact it was evidently working up for a north-easterly gale, and I knew that bad weather might last for ten days or so. It was therefore highly desirable to make the passage across as soon as possible, as it would have been most

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inconvenient and dangerous to keep the King at Boulogne for so long a time. I therefore asked his medical attendant if it would be really a serious matter if the King suffered from sea-sickness. He assured me that it would do him no harm and might even be beneficial, so away we went and I am glad to say that no evil effect resulted. I remember well, when we sighted No. 3 Buoy, telling the Captain to give it a wide berth, and we passed a mile or so from it. I always insisted on this precaution on passing buoys as the Germans not infrequently laid mines in their vicinity. It was in rounding this buoy that the *Anglia*, a hospital ship, was mined shortly afterwards.

His Majesty also visited Dover and the establishments at that port, lunching on board the *Arrogant*. This visit was greatly appreciated by the officers and men, especially by the fishermen, for he paid a visit to a trawler and drifter and conversed with the Captain of those vessels in a way that only a sailor could talk about the sea and sea work.

I further had the pleasure of presenting to him Lieutenant-Commander Gartside Tippinge, the oldest officer then serving afloat; for he was seventy-two years of age. He had been the Lieutenant in command of the *Dapper*, a gunboat attached to the *Britannia*, when the King had been a naval cadet. It is a melancholy fact that, a few days afterwards, this gallant officer was killed when the yacht *Sanda*, of which he was the Captain, was sunk during a bombardment off Zeebrugge.

The King also most courteously called on my wife, an honour greatly appreciated.

It has always been to me a matter for regret that, considering my many associations with His Majesty, the Admiralty should have refused to permit me to be received by him on my relinquishing my command at Dover.

KING ALBERT OF THE BELGIANS AND QUEEN ELIZABETH

I mention these two Royal personages together, for I never saw them apart. When the War started King Albert decided to continue to reside in Belgium, and never to leave the country over which, at all events in name, he still ruled. It is needless here to speak of his conduct before hostilities,

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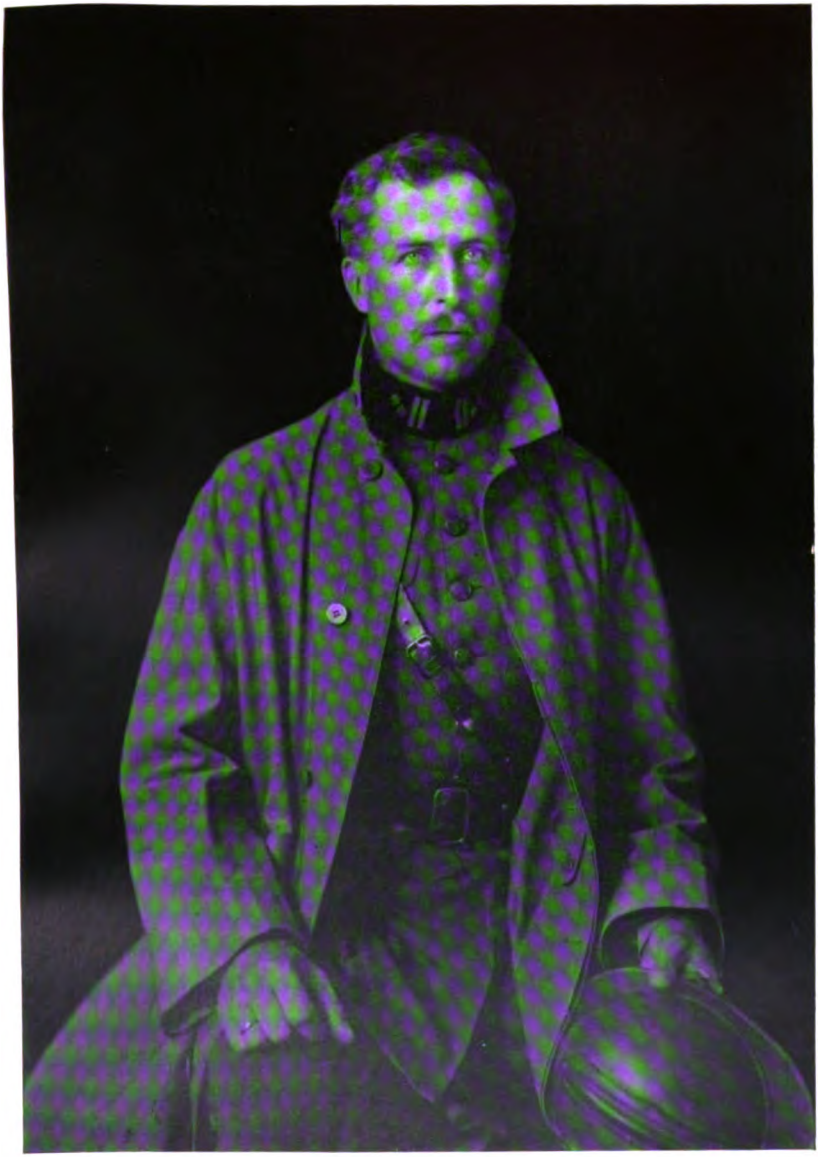

KING ALBERT OF THE BELGIANS

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and of the line he took immediately on the outbreak of the War. That will always be associated with his name and will never be forgotten.

In Queen Elizabeth he had a most devoted consort, devoted not only to him, but also to her children and the land of her adoption. I saw a good deal of both, at their home at La Panne, and also had the honour of accompanying them on several trips to England in one of the Dover destroyers, when taking or bringing back their children from school. At sea there was a vast difference between the King and Queen. She was a born sailor, nothing pleased her more than to stand on the fo'c'sle when the sea was a bit rough and face the wind and spray. Had Belgium had a navy, Queen Elizabeth would have been idolized by the officers and men. The King was not so fortunate. He suffered from sea-sickness; but, even in this, he showed great spirit. He told me that it gave him a feeling almost of degradation, to discover that his mind was unable to override his rebellious tummy when the weather was rough, and this failing caused him genuine annoyance.

During 1916 and 1917 I always had a fear that the Germans might try to kidnap the King. It would have been the easiest thing in the world to do: a fast motor-boat from Ostend, a landing on the beach near La Panne, and the deed could have been accomplished. It may be asked what good would have been achieved? Perhaps none; but any adventure of this sort is a good thing to bring off in war-time. It gives food for laughter and conversation to your own people, and creates a feeling of shame and inferiority on the other side. Personally I should have felt deep shame had such a raid been successful, and yet I had no means of preventing it; the sole defence lay with the Guards at the Royal Residence.

MR. WINSTON CHURCHILL

Mr. Winston Churchill was First Lord of the Admiralty for more than two years before the commencement of the Great War. The first time we met was during the trials of gun mountings of the *Conqueror*, and the second time when I formed one of the deputation from the Coventry Ordnance

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Works which called on him to discuss the necessity for giving armament orders to that firm. I have previously mentioned this interview,[1] and I need only add that I, and I am sure all the deputation, were immensely struck with the broad statesmanlike view he took of the situation.

I next met Mr. Churchill over the 15-inch howitzer orders, and here again it was impossible not to be captivated by his dynamic qualities, and his disregard for time-honoured red-tape methods. To him war was war, which meant urgent supplies of those things which were necessary to carry on and win the war.

As regards his unfortunate split with Lord Fisher I need say little. In the life which I wrote of that great Admiral I have dealt with the matter fully. Sufficient to say that in this, as in many other acts of his life, his failings were, in reality, the exaggeration of his virtues. His self-confidence and energy, impelled by the unrestraint so typical of youth, clashed with the mature convictions of the aged seaman, so that, at last, co-operation became impossible. But the Admiralty in the days of Mr. Churchill and Lord Fisher was a real live place, humming like the busiest of bee-hives. Those who used the corridors moved at a speed which approached a run, and the energy of the gods who ruled found echoes in all the rooms.

I next met Mr. Churchill when I was at Dover and he was in command of his regiment in Belgium. Rumours spoke full well of his aptitude to command. It is said that Sir John French had promised him a brigade, an appointment which Sir Douglas Haig would not confirm as he was not looked on as a professional soldier, having merely served in the Army for a year or two as a subaltern. There is little doubt he would have risen to very high command had this advance in rank been accorded to him. He had many of the attributes of his illustrious forebear.

A rather paltry incident occurred at this time. I always made a practice of sending him to and fro in a destroyer when he visited England, and also to London in my official car. One day I received a letter from the Admiralty asking why I had employed my car in this way, contrary to the regulation which enjoined that I was the only person entitled

[1] See page 194.

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QUEEN ELISABETH OF THE BELGIANS

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to use the car. Evidently some under-strapper at the petrol-station had discovered that the chauffeur had brought Mr. Winston Churchill to London, and a jack-in-office had initiated the inquiry. I replied that I considered it obligatory that I should show all courtesy possible to an ex-Cabinet Minister. Needless to say I heard no more on the subject.

After I left Dover I wrote to Mr. Churchill, in his capacity of Minister of Munitions, and offered my services. He at once appointed me to be Controller of the Inventions Department. Here I saw him quite at his best. He made a most excellent Head of a Department of State: always accessible, always ready to give a decision; always right in his conclusions. It was with the greatest regret to us all that he left the Ministry to become Secretary of State for War. Since then we have never met.

Unfortunately I was obliged, for reasons I shall give later[1] on, to comment adversely on his chapter in *The World Crisis*, in which he dealt with the Battle of Jutland.[2]

It has always been a mystery to me how he came to write those pages. He was one of the best, if not the best, prose writers of his day, whose writings have gained a popularity that they justly deserve; yet, in this particular instance, he failed to grasp the essence of the tactics used in that battle, and enunciated opinions that are at variance with those held now by all officers who have studied the subject with candour and without bias.

I fear that Mr. Churchill may have looked on my criticisms as a sign of ingratitude. They were nothing of the sort. But, when I had to choose between silence, or stamping on rumours derogatory to the professional ability of my late Chief, Sir John Jellicoe, I had no option but to take up my pen and fulfil what I looked on as a plain duty.

In Mr. Churchill we have a queer paradox. One of the two greatest brains of our time—for the late Lord Birkenhead must rank as his compeer—a man who has held no less than six Cabinet portfolios, a brilliant speaker, a man of indomitable courage, and yet he has never risen to the pinnacle of political ambition, and become the Prime

[1] See page 361.
[2] *The World Crisis*, a criticism.

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Minister of England. It may be pardonable on this point to misquote two lines from Hamlet:

> 'There is a fell fate which shapes our ends,
> Rough hew them how we will.'

Since writing the above, war has broken out, and Mr. Churchill amid universal acclamation has once more entered a War Cabinet. Here again is one more turn of the kaleidescope—what will the future bring? *Chi Sa?*

LORD FISHER OF KILVERSTONE

I worked with Sir John Fisher in the Mediterranean for six months, at Portsmouth in 1904, as his assistant at the Admiralty for the year 1905, and as D.N.O. for nearly three years. I can therefore claim that few men have known him, and his varying moods, better than I have. I wrote his biography, but it is possible that this less pretentious work may meet many who have not had the opportunity of reading the other volumes, so I will recall a certain amount of what I have written elsewhere.

I dislike modern Admirals being judged by a comparison with Nelson, since the conditions of naval warfare have changed so vastly since 1805; but, in the case of Lord Fisher, the two were so alike, and yet so different, that a comparison cannot but be of interest.

Supreme as a tactician, Nelson was endowed with phenomenal foresight, and insight, in all matters relating to naval operations. Living in an age when close action between ships was possible, and, at the same time, possessing a dash and gallantry that took the nation by storm, he led our sea forces and inspired the personnel of the Navy to a pitch that forced them to crush all opposition on the oceans. Nelson may well be credited with having saved the country at one of the most critical periods of our history. He was, however, no administrator, nor could his temperament brook the compromise and concession which are so necessary to smooth working with colleagues and politicians.

The qualities of Lord Fisher were distinct from those of Nelson, but not one whit less valuable to the country. He had no opportunity to exhibit tactical eminence, he

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THE RT. HONBLE. WINSTON CHURCHILL, C.H., M.P.

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never commanded a fleet in war-time ; but by his foresight and administrative ability, and by the reforms which he instituted in the Navy, he saved the nation with his brain in the first Great War with Germany, as surely as Nelson saved us a hundred years earlier with his sword.

Lord Fisher had one principle only, which dominated his whole career. This may be summed up in one word—'efficiency.' He suffered from the same abuse, and the same imputation which often is levelled at the successful man, namely, that he worked for his own advancement. No more unjust charge was ever made ; he strove for his own advancement in the same way, and for the same end, as Nelson strove ; namely, that he knew he possessed the ability to aid in shaping the destiny of the nation if he attained the requisite rank, and was so afforded the necessary opportunity. To attain that power and opportunity he worked his hardest ; and, having secured both, he used them solely in the way he knew to be the best to secure the efficiency of the Navy.

John Arbuthnot Fisher never worked for anything or anyone except to forward the business of the nation. His answer to King Edward 'that he never contradicted a lie told about himself' is typical. I, who knew him well, have had the privilege of nailing some of these untruths to the post.

One of his maxims was 'Never Explain.'

His reasons written two years before the Great War were :

I. Your friends don't want an explanation. They believe in you.
II. The friends who want an explanation aren't friends.
III. Your enemies won't believe any explanation.

In 1911 he wrote : 'I never in all my life have ever yet explained, and don't mean to. The Day of Judgment will clear up things all right, and it isn't so far off. Perhaps the Battle of Armageddon is coming along now ! '

He was never popular with the Navy as a whole. The reason for this was that he loved his country more than the Navy. He put his country first, and looked on the Navy as

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the servant of the nation; and, moreover, a servant that had to be purged and chastened, so as to be ready and properly equipped for the great day of trial.

One marked feature of Lord Fisher's complex character was his extraordinary prescience, not only as regards events, but in respect of the opinions and actions of others. He never judged the actions or opinions of a person by what he, Fisher, would do or think, but in an uncanny manner seemed to foresee the working of every brain with which he was brought in contact, and instinctively to know the probable line of thought of each individual.

No man of strong views was ever so open to argument, open to be convinced on any matter on which he had not himself accurate and technical knowledge, but adamant where experience led him to form his own conclusions. He knew he could look step by step into the future, surveying the vista with a mental glance; and, being convinced that his forecast was more likely to be correct than that of his fellows, nothing could shake his conviction.

As an example of his political foresight let me quote from a letter he wrote to M. Isvolsky, the Russian Prime Minister, in 1908, which shows that he possessed a clear vision of what should have been our near-eastern policy, and which, only in 1939, has been tardily recognized:

> 'I think you are assured that I have been a consistent advocate of England's utmost friendship with Russia. Since I came to the Admiralty as First Sea Lord, just four years ago, I have always maintained from a sailor's point of view for fighting purposes, that what we wanted was a quadruple alliance, Russia, England, France, and Turkey; and each of the four Powers would benefit. Each gains. I need not give you reasons; they are so obvious; but thank heaven it is all coming round to the blessed confirmation.
>
> 'I was equally opposed to the Japanese alliance and still am. The very worst thing that England ever did for herself. . . .
>
> 'Now I come to the point. The biggest mistake possible just now would be for either Russia or England to alienate or weaken the Turks. If they both get nothing

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whatever out of the Turks, then Russia would be as much in favour with Turkey as England just now. Again, if a word were now spoken about the Dardanelles, there would be a great agitation in England. Wait some little time, and then let Russia make her own private arrangements with a grateful Turkey, and you may rest quite sure that England won't then object, for the simple reason that anything that will bind Russia, England, and Turkey together is to England's advantage and far outweighs any objections to what Russia naturally and rightly wishes in regard to the Dardanelles. . . .

'The quadruple alliance of Russia, England, France, and Turkey is an obvious necessity for all four Powers. I only write as a sailor from the fighting point of view and as an onlooker; and I hope you will forgive my presumption in writing to you; but I happen to know the Grand Vizier (Kiamil Pasha) and years ago we talked over all this when I was Admiral in the Mediterranean and he was Vali of Smyrna; dreaded by the Sultan, but worshipped by his countrymen.'

Again in September 1911 he wrote to Lord Esher:

'I really sat down to write and tell you of a two days' visit paid me here by the new American Ambassador to Berlin. *He is a faithful friend.* He is *very very* pro-English. (He has such a lovely daughter whom I have been dancing with, a perfect GEM. If she don't turn Wilhelm's head, I'll eat my hat.) My friend was American Ambassador at Constantinople when I was Commander-in-Chief of the Mediterranean Fleet—you know it was a ticklish time then; at the worst of the Boer War the British Navy kept the peace; that old Sultan (Abdul Hamid) told me so, and gave me a five-hundred-guinea diamond star, bless him! and he called Lord Salisbury a d——d fool for having left him in the lurch and for having said that: "England had put her money on the wrong horse," in backing Turkey, the Turks being the *one* people in the whole world to be England's fast and (if put to it) *only* friend. . . .

'Well, dear friend, it's a good thing that Leishman loves England. *He says our Turkish policy is the laughing*

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stock of diplomacy. Every schoolboy knows that we have a Mahommedan existence, and the Turks love us, but all we do is to kick them. As Leishman truly says, the Germans were in the dust by the deposition of Abdul Hamid and England was "ALL" to the New Turks, but slowly Marschall [von Bieberstein] has worked his way up again, and the Germans again possess the Turks instead of England. The Turkish Army, the finest fighting army in the world, was ours for the asking, and "Peace—perfect peace" in India, Egypt, and Persia, but we've chucked it all away because we have had d——d fools as our ambassadors. And how can it be otherwise, unless you put in men from the outside as, for instance, Bryce at Washington? Our strength is Mahommedan, but we are too d——d Christian to see it, and fool about Armenian atrocities and Bulgarian horrors! Tories and Radicals are both the same. Isn't it wonderful how we get along! Look at Delagoa Bay, that might have been ours, indeed *was* ours, only we fooled it away! Look at Lord Granville and the Cameroons! . . .'

Another great quality was his power of assimilating the ideas of those with whom he came in contact. It is ludicrous that people should have been shocked because he gathered up the ideas of others and issued them as his own. No man was ever more generous in acknowledging help he had received; but, to muddle the argument, or destroy the lucidity of a proposal, in order to acknowledge the source of his information, would have been childish. He had many helpers in formulating his various schemes; but with him alone lay the final sifting of the wheat from the chaff, and the co-ordinating and correlating of the various points in their true perspective, and the final decision.

A marked feature of Lord Fisher's dealing with his fellow-workers was his ability to imbue them with the idea that the ultimate success of a scheme rested on their own particular and individual work, that it was up to them to make the project a success or failure; he thus got the best of their endeavours. Looking back, I am sure that there was not one of the scores of workers who helped him who would not readily agree that, however much they helped,

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they merely supplied the stones for the master builder to use, and that the real credit for the finished structure rested with Sir John, and Sir John alone.

In 1889 he was selected to represent the British Navy at the Hague Peace Conference. No better man could have been found to pit against the German delegates; who, though imbued with military doctrines of Bernhardi, found in Lord Fisher a man whose views on ruthlessness in war left little for them to desire. They met their match.

> ' " The humanizing of war ! " (he declared) ' you might as well talk of humanizing Hell ! When a silly ass at The Hague got up and talked about the amenities of civilized warfare and putting your prisoners' feet in hot water and giving them gruel, my reply, I regret to say, was considered totally unfit for publication. As if war could be civilized. If I'm in command when war breaks out I shall issue my orders :
>
> ' " The essence of war is violence."
> ' " Moderation in war is imbecility."
> ' " Hit first, hit hard, and hit anywhere." '

Again :

After the delegates had been discussing the immunity of neutral coal-carrying merchantmen from seizure by the fleets of the belligerents. ' I listened to them,' he said, ' wondering that they could think that any of their resolutions would be recognized in war.' He then said :

> ' Look at me. When I leave The Hague I go to take command of the Mediterranean Fleet. Suppose that war breaks out, and I am expecting to fight a new Trafalgar on the morrow. Some neutral colliers try to steam past us into the enemy's waters. If the enemy gets their coal into his bunkers it may make all the difference in the coming fight. You tell me I must not seize these colliers. I tell you that nothing you, or any power on earth, can say will stop me from seizing them or from sending them to the bottom, if I can in no other way keep their coal out of the enemy's hands; for to-morrow I am to fight the battle that will save or

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wreck the Empire. If I win it I shall be far too big a man to be affected about protests about the neutral colliers; if I lose it I shall go down with my ship into the deep, and then protests will affect me still less.'

Lord Fisher went to the Admiralty as First Sea Lord in 1904. To a friend he wrote:

'I join the Admiralty on 21 October (a good fighting day to begin work). I am ready for the fray. It will be a case of *Athanasius contra mundum*. Very sorry for mundum as Athanasius is going to win.'

He knew, no one better, the opposition that he would have to encounter. Not only is every innovation in the Navy apt to be looked on with suspicion, but when sweeping reforms are instituted some toes are bound to be trodden on; some susceptibilities are certain to be offended; and a slur is inevitably, though unintentionally, cast on previous administrators.

The years 1905–1906 probably saw Lord Fisher at his prime. Constant opposition, coupled with advancing age and overwork, subsequently wrought a change in his methods, and made him more autocratic and less careful to smooth out difficulties and to convince the doubting mind. He divided the waters rather than, as was his wont in his palmy days, sail over them; and, to continue the simile, he discarded the golden wheels of diplomacy so that his chariot drove heavily between the waters that threatened to engulf him.

Lord Fisher left the Admiralty in 1910. He returned again during the early part of the War, and with lightning rapidity and accurate judgment dispatched the battle cruisers to the Falkland Islands to destroy Von Spee's squadron, and, at the same time, to wipe out the prestige gained by Germany at the battle of Coronel. This had to be a swift and secret stroke. The ships were ordered to leave by a date which left no margin for contingencies. Difficulties arose, but Lord Fisher dispelled them with iron inflexibility, so that one ship at least carried on board of her, during the whole of her cruise, those skilled workmen who

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had been unable to complete their work before the ship left port.

Events showed that had a delay, even of two days, been sanctioned, the result of the expedition might have been vitiated and the golden opportunity lost.

He rendered incalculable service during this short term of service at the Admiralty by laying down some five hundred vessels, the majority of which proved later to be invaluable. Those in command at sea can testify what it meant to the Navy, and therefore the nation, when destroyers came pouring in from the builders in 1917 and throughout 1918. In this respect once more his foresight was beyond that of his fellow-men. His departure from the Admiralty, and the consequent loss of his unique driving force, was a tragedy. For the remainder of the War he had to be content to stand apart and watch others handle the vast organization for the efficiency of which he had lived his life, and on the building up and perfecting of which he had expended all his phenomenal energy to ensure in the end the safety, honour, and welfare of his country. The great tragedy of his life was that he did not die in December 1914: had he done so, he would have left a reputation second only to that of Nelson.

GENERAL FOCH

I met General Foch only on one occasion, beyond a few short greetings on his arrival at Dover to attend conferences in London, and that was when I motored to his headquarters when he commanded the northern armies. I had for some time been considerably uneasy about the sea defences on the northern coast of France and Belgium, between Dunkirk and Nieuport. It seemed to me that a landing could easily have been carried out anywhere on this strip of coast, especially as our air photography early in the War was beneath contempt. I fail to understand why the Germans never made the attempt. Special barges filtered through the canals down to Ostend, which was only eleven miles from the probable point of landing; one hour's steaming on the part of the barges, and ten thousand men could have been thrown behind our lines, and six or seven miles of line nipped through. Then the German Army Corps on the

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coast of Belgium could have streamed through the gap and rolled up our line nearly down to Ypres. I kept a monitor and destroyer anchored near La Panne in the summer months to interfere with any such event; but I could not guard completely against the attack had it been attempted.

I pointed out to the General that the machine-gun emplacements on the coast were silted up with sand, that no guns were in place, and that there were no defence measures in force along this strip of the coast. He asked how many men the Germans could throw ashore, and I replied, if necessary any number up to twenty thousand, as it was needless for them to take any impedimenta, since within two hours they should have joined hands with their friends across the Yser, and their supplies could have reached them in under twenty-four hours. In the meantime Dunkirk would have fallen. He seemed to be considerably impressed and gave orders for the machine-guns to be remounted and a defence instituted.

Of course, as in the case of all operations that did not take place, it is impossible to estimate what the chances of success would have been; but, given rain and thick weather during the assembly of the barges, and taking into account the element of surprise, as well as the fact that there were at the time practically no military reserves worth mentioning in the coastal sector, it would have been well worth while for the Germans to have made such an attempt.

SIR JOHN FRENCH

In 1914 and 1915 I visited Sir John French twice, at Mr. Churchill's request, on matters connected with the 15-inch howitzers.

The occasion I best remember was about Christmas 1914, when he showed me a photograph of the effect of bursting a high-explosive shell, fitted with the new percussion fuse, against a wire entanglement. Hitherto the high-explosive shell had been provided with an ordinary nose-percussion fuse; that is, a fuse which acted when the nose of the shell hit something solid. The result was that, during a very short time in which the fuse was acting, and before the shell had detonated, it had buried itself in the ground; thus the

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resulting explosion was mainly directed vertically into the air and its effect was extremely local. To overcome this the French had just developed a fuse fitted with an antenna that projected several inches beyond the fuse; when this struck the ground the fuse commenced to work and the detonation therefore occurred before the shell had begun to bury itself in the ground. The result was that the explosion and the shell splinters acted like a scythe and sheared away the neighbouring wires of an entanglement just above the ground. This fuse became of the greatest value in destroying barbed-wire protections.

But this development had further far-reaching results, in that it led indirectly to the formation of the Coalition Government in England.

I must here hark back to the Boer War. It was as a result of that war that the outfit and reserves of the field guns and howitzers were fixed at 25 per cent high explosive and 75 per cent shrapnel shell; the reason being that it was found that when high explosive shell burst in the kopjes, very little harm was done to the Boers, whereas shrapnel was much more effective. This percentage was retained during the early months of the Great War. No apparent reason existed for altering the proportion. But, as soon as it was found that high explosive shell could be used to cut wire, a cry arose for large supplies; and the Army would willingly have reversed the percentage of supply to 75 per cent high explosive and 25 per cent shrapnel, or even have increased the percentage of high explosive still further. Of course, as with all sudden demands, requirements could not be met. The trouble was increased by the growing use of motor vehicles for ammunition supply.

When quick-firing guns were first invented two opposite schools of thought arose as to their value. One insisted that they were valuable, the other that it was impossible to keep up a sufficient supply of ammunition to maintain the new high rate of fire; hence, all the ammunition available at a gun would be fired away in a few minutes, and the guns would be of no further use. This was countered by School No. 1, who insisted that the value of the guns lay in reserving their ammunition for a critical phase of the fight, when rapidity of fire would be all-important. It was this

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school that won the day. I believe I am correct in saying that the only motor vehicle, bar private motor cars, which were landed with the Expeditionary Force, was a motor ambulance supplied to Sir John French by some of his friends. But, as soon as motor transport came to be used for ammunition supply, it was found that large quantities of ammunition could be brought up to the firing line in a very short time. Then, of course, a demand came for more ammunition, and the resulting cry arose: 'Why is the Army kept short of ammunition and more especially high-explosive shells?' As I have shown, the answer was that cutting wire and motor transport had upset all previous notions. But it was not to be expected that the British public would be satisfied with such an explanation. The Liberal Government was shaken to its core, and the Coalition Government came into being.

EARL HAIG

I visited G.H.Q. several times to discuss our projected joint operations. On each occasion Sir Douglas took me into his room after dinner and explained the situation at the front and the operations he proposed to carry out.

Clever and sound as he undoubtedly was, he had not the gift of exposition. When explaining a situation or plan, he gave the impression of a man whose brain was in advance of his speech, as if he were weighing pros and cons even while explaining his proposals. In fact, it required considerable concentration to follow and grasp his expositions. I could readily understand how it was that he failed to impress politicians, men who had the gift of speech, the speech of angels and even, perhaps, of devils; whose business it was to explain to men of all sorts, and even, persuasively, to convince them that black was almost white, and white approached nearly to black. To such men the rather disjointed sentences of the General could only seem to emanate from a dull brain. That this, indeed, was far from being the case all who knew him intimately can testify.

He had a great personality, one which cannot be expressed better than in a sentence uttered by Lord Northcliffe when visiting G.H.Q. On one occasion he was being

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shown round by a senior staff officer[1] when he suddenly turned and said, apropos of Sir Douglas: "I appreciate for the first time the power that being a perfect gentleman can give." The very colloquiality of the remark adds to its force. Putting aside Sir Douglas' qualifications as a General, and these admittedly were of the highest order, the peculiar qualities which blend to make a 'perfect gentleman' are those which inspire confidence and regard, and this explains the great hold he had over the affections and confidence of the Army commanders and the officers and men who served under him.

I happened to be at G.H.Q. shortly after the tanks had been in action for the first time. Sir Douglas told me that he had received conflicting reports about their value, and asked me to go to the tank headquarters and to give him my opinion on the subject. I accordingly went, and found there was a great deal of grumbling about their steering, ventilation, and the noise and temperature inside when they were under way. I saw that the steering could be greatly improved by introducing a differential system for driving the tracks, and that the ventilation also could be largely ameliorated, but that the noise would be very difficult to eliminate. On my return I said to Sir Douglas: "If you will forgive the Rear-Admiral commanding the Dover Patrol telling the Commander-in-Chief of the British Army in France what he would do were he in your place, I should suggest sending all tanks back to England to have their steering and ventilation improved, and also allow a report to get through to the Germans that they are useless; but, I should, at the same time, report to England that they are a splendid invention, and when these defects are put right they will be most valuable. I would then collect and train about three hundred of them in France and put them in as a surprise when you have a really big offensive." I supplemented this by saying that it seemed a pity to dribble them into action in small numbers; but that if they came as a surprise in large numbers they should be of immense value.

[1] Colonel Cecil Allanson, C.M.G., C.I.E., D.S.O.

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LORD JELLICOE

Heredity had equipped Lord Jellicoe with a charming disposition and firmness of character; and between these two somewhat opposing tendencies, he developed a wonderfully balanced judgment. He could steer a middle course between undue optimism and pessimism; he avoided the lures of hero-worship yet contracted firm friendships; and all the while the middle course was the straight course. That is the wonderful part. To most of those not blessed with a meticulously balanced judgment, that which may appear to be a straight course is, in the end, often proved to have been biassed and drawn over to one side or the other. The straightness of the course he steered was due to the fact that he never allowed personal inclination or advantage to weigh against right, nor to cause him to neglect doing a kind act to others. His success was largely founded on this stability of character. He was truly religious; but in a practical way. His religion was personal to himself. He read his Bible daily, but made no parade of so doing. He attended a church service every Sunday, yet if the weather was fine he would play a round of golf in the morning and go to church in the evening. Undoubtedly he owed a good deal to his mother and her teaching; for his natural tenacity caused him to adhere all his life to the principles she had instilled into him. His life was a life of discipline. No man ever kept better guard over his tongue. If a subject was broached which he disliked, his mouth shut with a snap and he would neither discuss nor argue. It is said of him that he never made a remark about a person that he would not have repeated in his or her presence. This in itself is a wonderful tribute to character and self-control. The discipline of his life is somewhat reflected in his ideals of naval discipline.

He had the gift of capturing the affection and regard of all who served under him. The time when I came to know him best was when he came to the Admiralty as First Sea Lord after relinquishing the Command of the Grand Fleet. He was then faced by a difficult situation. The submarine offensive was eating away our merchant fleet,

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ADMIRAL OF THE FLEET EARL JELLICOE,
O.M., G.C.B., G.C.V.O.

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and a co-ordination of all our resources to combat this war on our trade had become an urgent necessity. He faced facts squarely and fairly and in a single year dealt a death-blow to the submarine menace. But he was not *persona grata* with Mr. Lloyd George. The ignorant comments of the Press regarding the Battle of Jutland had undermined his prestige. His name no longer carried the same weight with the public as it had done prior to 1916. It was to take the English nation nearly twenty years to appreciate the consummate skill with which he had fought that momentous battle. Had he adopted the tactics which were then urged by the loud voices of those who had been inadequately informed, England might well have lost the War. But, as I have said, his prestige at the moment was badly shaken. This, then, was the moment for his enemies and belittlers to press home their attack. Nobly he carried out his safe and unsensational programme, withstanding those who wished to try rash innovations before experiment had indicated the safe course to be pursued. The result was that he was kicked out of the Admiralty. I have no reason to belittle the capacity of his successor, which was that of the average naval officer, but it is only right to say that neither in experience nor ability could he, in any way, be compared to so great a master of his profession as Lord Jellicoe, and there is little doubt that this was the opinion of the Navy.

As can well be imagined, my work at Dover had brought me often into direct contact with Sir John Jellicoe, who was ever most helpful to me in my work and understanding of my difficulties. He was more than once approached to agree to my being dismissed from my command; but either rightly or wrongly he was convinced that from my past work and experience I was more fitted to command the Dover Patrol than was the candidate recommended by the clique at the Admiralty, who were trying to engineer my removal. His fight on my behalf caused him yet more unpopularity with the supreme powers. When, at last, he was removed from his post of First Sea Lord, he wrote to me and warned me that my turn would shortly come; nor was he wrong in his forecast.

Here I need only say that, although I worked in perfect

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harmony with his predecessor, still there was no doubt that the regime instituted by Lord Jellicoe created in us all a feeling of greater confidence and a surer belief that the ends we desired would be attained.

Throughout the winter of 1916, when the lightning raids on the Straits of Dover by destroyers took place, he was very patient. He knew the difficulties of the situation, and the ease with which those tip and run raids could be carried out on the dark nights with little chance of sighting and engaging the enemy. I remember particularly the night of 20 April 1917, when the raid on the Straits was in progress, I was for some time talking with him on the telephone, and told him the slender chances of our intercepting the German destroyers; but how if they passed close to the south-west of the Goodwins there was still a chance of our flotilla leaders meeting them. Then after some ten or twelve minutes I was able again to call him up and tell him that firing had commenced in the direction of the south-west Goodwin light, and he and I were both greatly relieved; but never during my long talk did he exhibit the slightest impatience or want of appreciation of the difficulties under which I was working. A less understanding chief would have been a nuisance and not a helpful support.

Perhaps the most extraordinary of his many qualities was his self-control. As an example, let us try to imagine his feelings on Christmas morning 1917. That morning he had been proclaimed throughout England as a failure, his dismissal from the Admiralty ('sacked' he called it) was capable of one explanation only, and that was, in the opinion of the Prime Minister and the Cabinet he was not fitted for the post. The official excuses advanced were contradictory and unsatisfactory, obviously therefore only put forward to hide the facts. He had been succeeded by a man unknown to the country, and, so far, untried in administrative capacity. The people of the country could not conceive that so drastic a step as summary dismissal could have been taken unless he had failed, and failed badly. That portion of the Press that had been attacking him maliciously had triumphed. He knew the reasons for that Press campaign, he knew the instigators and the motives

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that governed their actions, he knew well the conspirators behind the scenes, who had pulled the strings and spread disparaging reports and whispered in all too willing ears. But above all he knew that he had succeeded in his work, that the back of the submarine campaign had been broken by the labours of the officers he had brought to the Admiralty and whose duties he had organized and whose work he had encouraged. He knew that for months he had foiled the attempts of those who would have seized the helm from his grasp, and who would have wrecked the country through undue haste and unwarranted optimism. He knew all this, and yet he kept silence. He never complained. He never tried to justify himself in the eyes of the nation. He merely accepted the decision of the Prime Minister loyally, and held himself ready for any further war service that might be offered him. He was satisfied that one day the truth would prevail; but he had no conception how soon, or how complete, that vindication might be.

And here it is necessary to call attention to a most important fact. Writers of the sensational fraternity have scribbled about the 'Jellicoe faction' and the 'Beatty faction.' Neither of these two Admirals has ever written a word, or spoken publicly in criticism one of the other. Whether Lord Beatty ever checked his clamorous partisans I know not, but Lord Jellicoe constantly urged moderation on his, perhaps, too ardent supporters. He had more than one account of the Battle of Jutland sent to him for his remarks, and in each case he earnestly suggested moderation of criticism. To one correspondent who had sent him an appreciation of Jutland he wrote: 'I hope you will forgive me for saying that I think you are a little hard on Beatty' . . . and again: 'I certainly am of opinion that your work should be published, after a bit of toning down, especially in regard to Beatty . . . with all his faults, he had some very good qualities.' Of another he wrote: 'I think the book is spoiled by his severe criticism of Beatty.'

Like everyone else, he recognized, of course, that mistakes had been made, but he was strongly averse from these being unduly emphasized. If any split in the Navy in the shape of a 'Beatty' or 'Jellicoe' faction existed, such a split was due entirely to over-zealous partisans, who

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rushed into print ignorant of the truth, and thereby impelled answers no less temperate than their own. But the two leaders kept silence.

Lord Jellicoe disliked controversy intensely. He wrote full answers to the criticisms published by Mr. Churchill, for he looked on him as a responsible writer, but the smaller fry he treated with the contempt their rashness deserved. His answer to Mr. Churchill is on record should it be required, but he refrained from publishing it, as he was confident that truth would vindicate itself without his help. But attacks on his officers, like that on Admiral Sir Hugh Evan-Thomas, upset him considerably. In this respect he found himself in a dilemma; he wished to defend them, but he could not bring himself to write to the Press. He chose rather to leave his defence of them to be published after his death. But the tragedy of Lord Beatty's death has intervened, and the defence remains as yet unpublished.

He was right in his belief in ultimate vindication, for indeed it came in the wonderful tributes paid to his memory after his death. He never lived to see how triumphant that righting would be. He, like King George, would have styled himself a very ordinary man. His monarch lived to see his Jubilee and to have brought home to him the intense love and admiration of the nation. Lord Jellicoe had not this tardy satisfaction. On his death-bed his visions were of duty done, he felt that he had been 'to the end faithful,' but he had no inkling of the love and respect that would be shown to him by the thousands in his last sad journey to his grave in St. Paul's, of the wonderful eulogies in the Press, the loving words of his many friends, nor of the number who in humble circumstances had treasured small acts of thoughtfulness and kindness and who paid tribute in the only way that lay in their power by words of memory and gratitude.

LORD KITCHENER

I first met Lord Kitchener at the War Office in August 1914, when I attended a meeting of a Cabinet committee at which he took the chair. He wished the Coventry Ordnance Works to supply as many 4·5-inch howitzers and

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equipment as possible. He asked what I could do by the following June. I replied that I could supply one hundred and twenty complete sets. He pressed me to take an order for three hundred. I told the committee that I was building new shops, and that I had a man in America buying up and sending over all the machines of the nature we required on which he could lay his hands. That I had every one of my present machines full of work, and that I could not promise more than one hundred and twenty. I added that I would do my utmost to increase that number, but it was useless my promising more than I could perform. Still he pressed me. He said that Vickers had promised to produce three hundred sets of field-guns and pressed me to take on the like number of 4·5-inch howitzers. I replied that 'Trevor Dawson knew what he could turn out, but that I knew that I could only promise one hundred and twenty sets.' I also stated that I had already had the greatest difficulty in sub-contracting some of the parts, as most manufacturers were full of their own work, and to perform one special and rather delicate operation on part of the breech mechanism of the howitzers, I had only been able to find two firms who were capable of doing the work. Further, I said that the time would come when the Government would have to take over all the skilled labour in the country. Mr. Lloyd George, at once, with his usual acumen, seized on this point and asked if I recommended that this should be done. I replied: "Not at present, sufficient machines are not available, but before long you will have to do so."

I have never been able to understand Lord Kitchener's attitude. That he wished to speed up manufacture was natural, but what he required in the following June was the goods and not unfulfilled promises.

I remember his rather pensive astonishment when, at the War Office, he told me that he had just met the Quartermaster-General of the French Army, who told him that at the battle of the Marne the French had fired away one half of the whole of their outfit and reserve ammunition: evidently in his mind he foresaw a new series of grave difficulties. There is no doubt that he had a clearer vision of the probable duration of the war than almost anyone in

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England, and his foresight in starting what was called 'Kitchener's Army' should never be forgotten.

His tragic end was the most extraordinary combination of adverse circumstances.

On 5 June 1916 he left Scapa Flow in the *Hampshire* on his way to Russia via Sweden. About 7.40 p.m. the ship struck a mine, and all except twelve men were drowned. The chain of events was truly remarkable.

(*a*) The minefield had been laid as part of the offensive strategy of the Germans which led up to the Battle of Jutland. Had any week but the one chosen been selected for Lord Kitchener's departure, this particular channel would have been free from danger.

(*b*) The Germans had laid a minefield in this particular channel on false information. They believed it was used by our men-of-war, whereas this was not the case.

(*c*) This was the first minefield laid by a submarine farther north than the Tyne.

(*d*) The channel selected was one which was kept under constant daytime observation, and therefore no minefield could have been laid in it by surface craft. This in combination with (*c*) led to it being looked on as free from mines.

(*e*) The gale which was blowing at the time prevented a precautionary sweep being made.

(*f*) The same gale that rendered sweeping impossible made it inadvisable to adhere to the alternative route which had at first been selected, as it was open to being mined in daytime, and was therefore dangerous.

(*g*) Lord Kitchener's programme did not permit of delay in sailing.

(*h*) All the various routes that had been discussed and in turn discarded by Sir John Jellicoe and his Chief-of-the-Staff, Admiral Sir Charles Madden, turned out to be safe.

(*i*) If the gale had not reduced the speed at which the destroyers could steam to below that of the *Hampshire*, they would not have been sent back to port, but would have remained with the ship and a considerable number of lives might have been saved.

Such is fate.

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ADMIRAL DE MARLIAVE

When I joined Dover, Vice-Admiral Favereau commanded the French forces in the eastern part of the Channel, which command was entirely separate from that of the Admiral at Dover. I remember with gratitude that, although he was senior to me, and because of the enormous press of my work at that time, having just taken over the Dover Command, he waived all ceremony and came to Dover to call on me, instead of my making the rather long trip to Cherbourg. After a few months it was decided to place all the forces, both sides of the Channel, under the Admiral at Dover. Rear-Admiral de Marliave was appointed senior naval officer on the French coast. He, of course, retained all the administrative functions of his command; it merely fell to my lot to arrange the disposition of available vessels; but, here again, obviously, such dispositions were made with the concurrence of the French Admiral. Matters of this sort are easily adjusted when both sides have solely in view the successful prosecution of the War. It was my business to make myself acquainted with the ideas of the French Navy, to recognize the French point of view, and to adjust the use of their vessels having these considerations in mind. On the other hand, the French Rear-Admiral, sinking all prejudices, loyally supported me, and gave me the full advantage of his valuable opinions on the particular situations as they arose.

The questions of trade routes, mine-sweeping, and drift nets, all came under review; and although in such matters I considered that the French senior naval officer should have sole control on his own coast, subject to the general policy of the area, he elected to send his officers to Dover to study our methods and appliances. He took the broad-minded view that, with our large coastal traffic, we had better opportunities of gaining experience than a more limited traffic on the French side had afforded to those under his orders. The result was most happy, since the systems on both sides were broadly unified, while the greatest goodwill and understanding prevailed.

On 26 January 1916 the Admiral flew his flag in H.M.S.

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Lord Clive during a bombardment of positions on the Belgian coast. Probably this is the only case on record of a French Admiral flying his flag in a British man-of-war in action.

ADMIRAL RONARC'H

I know few naval officers for whom I have a greater regard than Admiral Ronarc'h, who commanded the naval forces at Dunkirk during the majority of the time that I was at Dover. He was responsible for the heroic defence of Dixmude, which was one of the main causes of the German advance along the Belgian coast being held up. He was a sound, phlegmatic seaman of great experience. I kept the Admiral informed of all my activities and proposals, and of the dispositions of my vessels, and I suggested how he and his vessels could help me in these matters. We worked throughout the time in complete cordiality. He met my views in every way, which was by no means remarkable, as he was an officer of great experience, and was therefore in agreement with all my suggestions. We never, so far as I can remember, had any difference of opinions. He even agreed to so radical a measure as extinguishing the lights on the northern French coast. We were both most interested in the barrage off the Belgian coast and its component mine-fields, calling it my 'potager.' He came with me on board my destroyer when we laid the barrage.

I must here record my admiration for the work done by the French destroyers during the War. They had the important work of patrolling the north coast of France from La Panne to Calais, and more than once had a sharp scrap with the German vessels. Fortunately, Admiral Ronarc'h remained at Dunkirk for the duration of the War. The French Admiralty, with that realism that is so marked a feature in the Gallic race, were wise enough to recognize the value that experience gave to the officers holding high commands in war-time.

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ADMIRAL RONARC'H

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GENERAL ROUQUEROL

During my time at Dover I made the acquaintance of several of the French Generals, as the command of the troops on the coast underwent occasional changes. The one with whom I came most into contact was General Rouquerol, in whom I had a firm friend and a delightful colleague. Our work together was absolutely harmonious and he was always ready to help in providing positions for our guns; for at that time we were busy landing the heavy 12-inch, 9·2-inch, and 6-inch guns in preparing for the Great Landing. I frequently used to visit him to discuss the best position for them. He prepared one magnificent emplacement in a large canal dune, but we had barely commenced to mount the gun than the Germans shelled it and knocked the emplacement into a cocked hat, while Commander Bickford, the very energetic officer who was in charge, spent an unhappy hour dodging the shells in his attempts to save the more valuable parts from wreckage.

I remember one day lunching with the general, and just before that meal walking up to the small eminence behind his quarters. I supposed we were seen by the Germans, as they at once began to shell the neighbouring houses and continued to do so for most of the time we were at lunch. Afterwards we found that the guns had been turned on to a two-gun French battery about a mile away. Rouquerol was very keen to visit it and asked me to accompany him; but Colonel Barbier, his artillery general, intervened and was strongly against our doing so. While this discussion was going on Lord Athlone, who also had been at the lunch, asked me if I was going to the battery. I replied that if the General went I would, of course, also go; but that I considered it a very stupid thing to do. Colonel Barbier won his point and I carried off Rouquerol to see the 12-inch gun I had just installed in a barn building. Here he asked me again to visit the guns that were being shelled. I replied that if he went I would go, but that I thought it a very useless thing to do, as we could not possibly do any good by going. It was not until afterwards that it struck me that the kindly General was trying to forge an excuse for presenting

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me with a Croix de Guerre. But had this occurred to me sooner, I should not have been any keener to visit a place where 11-inch shells were falling. I was not a decoration hunter, also I held all the strings of the Dover Command and the Great Landing was fast maturing. Further, I was convinced, perhaps with unpardonable conceit, that, because of my experience, there was no other officer who could carry on the work at Dover so efficiently as I could, a belief that has been confirmed by subsequent events.

I had had my baptism of fire from the 11-inch Tirpitz battery at the abortive first attack on Ostend. Once more I came across the same shells on the day when we tested the first 12-inch gun against the Tirpitz battery—a most instructive firing, which taught me a lot about high-angle fire, and the wear of naval ordnance. This, however, is fully detailed in my *Dover Patrol* and need not here be dwelt on. While at lunch Tirpitz opened on us, pitching the shell about one hundred yards away. I therefore did not linger long over the meal, but watched a few more rounds from near our gun position and then walked to the telephone exchange we had rigged up in an adjacent house, and which was in connection with the forward spotting position, to hear how they were getting on. On the way there with my interpreter, Flag-Lieutenant Richard Keigwin, Tirpitz unkindly dropped a shell quite close to us. Fortunately, the ground was soft, so mud and not stones was hurled about, and the pieces of shell rose vertically in the air, but the explosion of the shell made my ears sing for some time afterwards. Eleven-inch shells were therefore no novelty to me, and I had no desire for a nearer acquaintance with them unless some good object would be thereby obtained.

It is queer how a single word unlocks the brain and lets out old memories. This singing of the ears reminds me that gunnery officers in the Navy frequently become deaf. Deafness leads to the story of the three partially deaf men—perhaps gunnery lieutenants—who were walking together :

No. 1 said : " Is this right for Wembley ? "

No. 2 replied : " No, it's Thursday."

No. 3 chipped in : " So am I. Let's have a drink."

I was very sorry when the age limit necessitated General Rouquerol leaving the command of the troops on the coast.

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ADMIRAL OF THE FLEET SIR ARTHUR WILSON,
V.C., O.M., G.C.B., G.C.V.O.

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But my memory retains a vivid image of one of the best types of French military officers.

ADMIRAL OF THE FLEET SIR ARTHUR WILSON, V.C.

Sir Arthur Wilson was the Captain of the *Vernon* for part of the time that I was on the staff of the Torpedo School. I also served under him in the 1904 manœuvres. But the time that I came most in contact with him was when at Dover during the War. He held a consultative position at the Admiralty, and I had the opportunity of remarking his great qualities. I never failed to visit him when I came to the Admiralty. I discussed all my plans with him and received great benefit from his shrewd advice and kind assistance. I should have liked, had it been possible, to complete a trilogy of the lives of the three greatest Admirals of the first thirty years of the twentieth century—Fisher—Wilson—Jellicoe—by writing his life also, but this fell into the able hands of his Flag Captain and great friend, the late Admiral Sir Edward Bradford, who, from intimate companionship, was far better equipped for the work than I was. I should, however, have welcomed the chance of paying tribute to a man who was in some ways the most remarkable sea officer I have ever met. These few pages must now serve that purpose.

Sir Arthur in all his appointments earned a reputation which singled him out from his contemporaries. Silent and reserved, yet not without a sense of humour, he formed no close friendships. In his leisure hours he seemed to live in a world of his own; he travelled one straight road without deviation, his only guide was his own judgment, his course the one that he considered to be right, and one, moreover, from which no human weakness or influence could cause him to deviate.

Sir Arthur looked on his body merely as an instrument to give effect to the workings of his brain. Though not an ascetic, his life was lived without self-indulgence. His will-power was phenomenal and his judgment almost unfailing.

One marked trait was his unfailing courtesy, he never was effusive or insincere, nor yet discourteous. He fully appreciated that *humanum est errare* and accepted the failings

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of seniors or subordinates as part of the general programme of life. He won the sobriquet ' 'ard 'eart ' from the men not from any hardness of heart, but because no dereliction of duty or failure in fleet exercises was overlooked. If he ordered a drill to be repeated by a ship under his command, he paced the poop of his flagship, even in the late hours of the night, sharing the punishment that his sense of duty had inflicted.

It is little to be wondered at that such a temperament made few close friends ; on the other hand, it gave him the confidence and respect of all, and earned for him the reputation of being a great sea officer.

His temperament was antipodal to that of Nelson. Their characters were identical, so far as their professional mastery of tactics and strategy and their tenacity in fighting were concerned. In fact, Sir Arthur Wilson is the only Admiral since 1805 who was proved to possess these three essentials to a degree which warrants comparison with Nelson. But with Nelson, Nelson the man ranked next to his country ; to him his honour and reputation were everything. His human sympathy overflowed and hypnotized his subordinates. To Wilson reputation and honour were nothing ; his one dominating impulse (for it was not a sentiment, as with Nelson, but the impulse was none the less strong) was to perform his duty and command the Fleet to the best effect. That this also meant honour to his country seemed to him to be self-evident, and required no verbal emphasis on his part. The almost morbid reiteration of Nelson of ' his duty ' and ' his country ' was evidence of a delicate frame, and a highly strung mentality. The iron frame and balanced mentality of Wilson passed such sentiments by as obvious and requiring no translation into words. He refused promotion to Admiral of the Fleet, but so greatly was Sir John Fisher impressed with the necessity of his retention on the active list of the Navy, that he suggested to King Edward VII that he should personally present Wilson with a commission of Admiral of the Fleet. This was done, and Wilson relieved Lord Fisher as First Sea Lord. On retirement he refused a peerage.

As a strategist and tactician, Sir Arthur was unrivalled among his contemporaries. His conduct of the several

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combined manœuvres of the Home, Atlantic, and Mediterranean Fleets was faultless. Those senior officers who took part in the manœuvres of 1906 are not likely to forget the meeting on board his flagship, when he explained the reasons which guided him in framing the manœuvres, and the chances afforded to each side, and his final criticisms of the operations. After listening, for some two hours, to workings of that master mind, those who came thinking that they knew much, left with a chastened conviction that there was much more to learn.

At the battle of El Teb, a Gardner gun became temporarily disabled. Wilson jumped to the front and held the corner of the square single-handed, fighting first with his sword, and after this had broken with its hilt and his fists, until assistance arrived.

It is of special interest to those who knew and served under Sir Arthur Wilson to speculate how the war in the North Sea would have been conducted had he been five years younger, in which case he inevitably would have commanded the Grand Fleet.

Many officers feared that, in war, he would have risked too much, and that a situation, which demanded above all a safe strategy, might have been compromised by overconfidence, a disregard of mines and submarines and the innovations of modern warfare. In this view I do not agree. That all operations would have carried the mark of his personality is undoubted; what he would have done is known to himself only, for he never imparted his projects to others before the time came for their fulfilment; but his clear judgment was a safeguard that, although our losses might have been greater, the enemy would have suffered correspondingly more, and the existence of the Grand Fleet would never have been unduly risked. Looking back on the past, we are forced to admit that, in many respects, his estimates of the fighting value of the newer weapons of naval warfare had proved to be nearer to the truth than that set on them by some of his contemporaries. One thing is certain, no operations would have been carried out for his own advancement or glorification.

Throughout the War he was content to help, although past the age when he could be called on to command. He

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worked at the Admiralty as an independent adviser, supervising certain experimental details.

There was something very noble, but at the same time essentially pathetic, to see a man of his calibre who, but for the accident of age, would have been commanding our naval forces, contented to assist his country by devoting himself, in the later stages of the War, to improving the mechanical details of our mines and the method of mooring them in a tideway.

Sir Arthur Wilson will not be handed down to posterity as one of our greatest Admirals. Fame will not be attached to his name, simply because he was five years too old. Much as this may be regretted by us, who knew his great qualities, he himself would have been the last to harbour any such feelings. Doubtless, it must have been a great disappointment to him, knowing his store of experience, that he was unable to 'ride the whirlwind and direct the storm,' but the fact that Wilson, the man, was not in command to reap honour and distinction, would never have caused him an instant's regret.

From one point of view, and only one, I cannot help thinking that it was a misfortune that command was denied him; for, although no man could have commanded the Grand Fleet more ably than Lord Jellicoe, had Sir Arthur Wilson been in command, his character would have been indelibly stamped on the pages of history. Future essayists would have analysed his rare qualities, and his unique character would have been more surely handed down for the future guidance of young seamen. A study of the lives of Sir Arthur Wilson and Lord Jellicoe, each complementary to the other, would have formed a wholesome guidance and would have helped to mould their characters and benefited them morally in their naval careers.

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Chapter XVI

THE LAST TWENTY-ONE YEARS

TO TRY TO COMPRESS TWENTY-ONE YEARS OF ENGLISH country life satisfactorily into a single chapter is to attempt the impossible. I must be content to deal only with such events as are usually outside routine happenings and omit all reference to electioneering and county and village work. I must, however, commence by saying one word of thanks to all my kind neighbours whose hospitality has afforded me numberless delightful days at their coverts and partridge driving. Sad to relate, the cold hand of death as well as death duties has quite changed that part of England in which I live. My game-book is a sure guide, and therein I find that whereas in 1929 I had seventeen shooting hosts, in 1939 that number had dwindled to six. Death has claimed six of the best and the remaining five have either sold their properties and left or have given up shootings that they held. One of the charms of shooting in England is the opportunity that is afforded of meeting old friends and making new acquaintances. I see that in one season only I met one hundred and forty-nine different guns. Many of these were old friends gathered from distant parts of the country.

If I began to write on the subject of shooting I would exceed the space allotted to this book. I might, however, mention one queer happening. My loader[1] was walking down a ride, carrying my shooting-seat, one of the Mills all-metal variety, when, seeing a woodcock coming towards him, he aimed a blow at it. The bird closed its wings and shot through the hole in the seat, a quick bit of work on the part of the bird's brain.

Another anecdote, told me by a friend, is worth repeating. At the edge of a rickyard ran an iron fence. When anyone approached the rick, the sparrows had a habit of

[1] George Alford.

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rising from the chaff, in which they had been hunting for grain, and settling on the fence. One day he neared the yard with a friend and arranged a plot whereby he would clap his hands to make the birds rise and his friend at the same time should fire along the line of the fence and see how many of the sparrows he could kill. The birds rose to plan and his friend fired, evidently a bit late, for they all flew away except one, which, probably grazed on the head, turned round and sat on the muzzle of his gun! An act conveying greater contempt can hardly be imagined. I remember once seeing the same covey fly twice over the guns in a single flight. I happened to be the right-hand gun beyond a cross fence. The covey, after going over the guns, turned and flew round well clear of me and then back to the field from whence they had come; then, seeing the beaters, who were still some way off, continued to turn and flew over the fence a second time. Probably the old cock had been killed on the first flight over the fence.

Another queer happening, the odds against which must be many thousands to one, occurs to me. It occurred at golf, not shooting. A friend was playing a round on the Bramshaw links against his chauffeur, who had started life as a caddie. Having played the ninth hole in one, he turned to his man and said: "Now beat that." The man could not of course achieve the impossible, but he played the hole in one also.

There is a hundred-year-old tragedy attached to my house in Hampshire; one of those pathetic happenings that bring with them a lifetime of suffering and regret.

Admiral Hill, one of Nelson's officers, bought the property and enlarged the house somewhere about 1815. It stood then in the middle of farm land of some two hundred or so acres. He was fond of racing, hunting, and horses, which trait was inherited by his only daughter, who became a keen rider to hounds. It was therefore only to be expected that she and the bachelor Master of the Hursley Hunt should fall in love, and become engaged.

One day her fiancé was due to ride over to tea, but sent instead a note, by a groom, to say that he had a cold and therefore could not come. She chaffingly rallied him on his desertion, saying that surely a cold was no excuse for his

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not coming to see his lady love. He therefore came, though against his better judgment, contracted pneumonia, and died.

The girl never forgave herself, but spent a solitary spinsterhood devoting all her time and money to the poor of the district, bitterly regretting, the while, the thoughtless action that had blighted both their lives.

The latter part of my life was largely affected by my building a house in Italy. In 1921 my wife and I, for the first time, spent a few days with my cousin, Mrs. Percy Cochrane, at her beautiful villa Rezzola at Lerici, on the Gulf of Spezia. Every winter after this we spent a varying time at the same place. The neighbourhood was quite unspoiled and the climate and the scenery charming. In 1924, as my wife was recovering from a very severe illness and it appeared to me that we should be obliged in future to spend several months of each year abroad, I determined to build a house in the same neighbourhood. The extra cost of the house, as compared with engaging a suite in a good hotel, was amply made good by the comfort of living in one's own home. I therefore bought an olive grove and built a house on the side of a hill, three hundred feet above the sea. The view from the house is best described by the Italian word *incantevole*, which is, I suppose, derived from the idea of a beauty that is even beyond the praise of song.

A description of our life, the house, the wild garden, the charm of the place, our delightful servants, their faithfulness and devotion, the country people and the country-side would fill a volume. I must here be content to point out how greatly interest in life is increased by indulging for five months in a complete change of life, change of scene, of language, of customs, climate—in fact, nearly everything. What has struck me most of all is how wonderfully Italy has improved in the seventeen years that I have known the country.

To appreciate this great work of reform it is necessary to cast a brief glance at the past history of Italy. For many centuries prior to 1860 Italy had been a mass of small states, at enmity and often at war with each other. Then about 1855 a gradual amalgamation took place. It is needless to follow in detail these stepping stones to Italian unifica-

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tion; suffice it to say that in 1872 the *Risorgimento* was nearly completed by the entry of Victor Emmanuel II into Rome. The Trentino alone remained in foreign hands. Italy then suffered for thirty-two years under a form of government which was alien to the temperament of the people. Democratic government can only succeed if political honesty is a paramount feature. Politics at that time in Italy were largely the medium whereby sinecures were bartered and preferment obtained.

Soon after the Great War started, the Italians wisely joined the Allies, and received the Trentino as a reward. The *Risorgimento* was then completed. But, during the War, the country had become honeycombed by Socialism. By the end of 1918 Italy was in a state of complete anarchy. The soldiers returning from the front were insulted and submitted to many forms of degradation. In 1922 it was barely safe to walk about a town at night or the adjoining country in day-time. Communism of a most virulent kind was rampant; a semblance of law and order was kept, largely by the unauthorized control exercised by the Fascist party, which was then rapidly increasing in strength.

Then came the march on Rome by the Black Shirts, who were determined to put an end to this disastrous state of affairs. The Prime Minister, Signor Facta, took a decree to the King for signature declaring a state of siege in Rome. This King Victor Emmanuel III refused to sign. To have done so would have brought civil war and bloodshed. His refusal meant victory for the Fascists. Signor Benito Mussolini then took over the government, and since then, Italy has never looked back. Order was restored and a huge programme of improvements, reforms, and reclamations of land was not only planned but systematically carried into effect. This was accomplished entirely owing to the acceptance of the doctrine of Fascism by the nation.

Fascism, as understood in Italy, is voluntary self-abnegation for the good of the country, and is as different as the poles are asunder from the spurious English imitation of the creed. Unified Italy was at that time passing through a stage of childhood. The people, since 1870, had been a single nation in name only. Actually they were still a conglomeration of a number of jealous communities. All

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children require a nurse, a governess, or father's strap. The first thing that was necessary, in order to cement the country together, was to insist on implicit obedience to all edicts, and to decree that no criticism of the government should be allowed. Mussolini, in fact, said: "I am out to regenerate the country, that is my sole aim, and I am not going to allow my work to be hampered, and my authority to be undermined by carping criticism. I am always glad to receive suggestions, and any which are sent to me will receive full consideration; but I am not going to stand the country being misled by factious criticism, either verbally or in the Press, and I intend to deal severely with any offenders." Judged from the standpoint of efficiency, there is no comparison between autocratic and democratic government. In the former there is one authority, who can make instant decisions and whose edicts all must obey. In the other there is factious wrangling, and outrageous waste of time. As Mussolini once put it: "The endeavours of science, invention, and engineering have been directed largely to reduce friction. The British form of government is that which introduces the greatest amount of friction into the work of ruling a country."

Now, I do not say for one instant that Fascism would suit the British temperament. It would not. We, as a nation, are a most insular, and nationally conceited race. We, as a whole, perfectly rightly, consider that our present regime of parliamentary representation is the one best suited to England. Probably this is so, for though it is cumbrous, inefficient, and creaks at every joint, it suits our conservative and unpractical natures. We make a fetish of liberty, which appears to our rather loose-thinking minds an abstract conception of a something surmounted by a halo, but really, when hunted down to bed rock, consists largely of the liberty of calling the Government of the day fools, or criticizing them or any other of our institutions with impunity. This lets off steam and does no harm. So we are happy. It never appears to us to be ridiculous that one half of our legislature should, as a matter of principle, contend that whatever the other half proposes is wrong, and that days and months should be wasted over quite unnecessary parliamentary wrangling. We are accustomed to it, we

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like it, and we would miss it greatly if it did not take place. We love to pride ourselves on the fact that every war in which we have been engaged has commenced with a muddle in some form or another—and, should the next war show a thoroughly efficient and well-organized start, the country will be dumbfounded, and feel that they have lost some time-honoured attribute, as well as the chance of showing off that peculiarly English virtue—the art of muddling through.[1] While acknowledging all this, surely we might accord to other nations the right to adopt the form of government best suited to their conditions and temperament. I am perfectly certain that Italy could not possibly have made the progress that she has, and have taken her place again as a first-class power, if she had not been governed by Signor Mussolini and his Fascist principles. It is for this reason that Italy looks on the criticism of their Fascist Government by our Press, and by many of our prominent personages, as a gross impertinence. We believe in our own form of government; well and good. The Italians believe in theirs; so the least we can do is to bridle our national conceit and credit them with ability to run their own affairs, and to judge for themselves what is best for their country; especially as the development and improvement of Italy in the last seventeen years is as great as, if not greater than, that of our own country in the last one hundred years.

I do not propose to enter into arguments as regards the 'freedom of the subject,' etc. As I have said, this, in England, *au fond*, consists in the boasted freedom of Englishmen to call the Government fools. Freedom in England differs from freedom in Italy mainly because there criticism is curbed, while here every Dick, Tom, and Harry is free to criticize everyone and everything. The result is that we are subjected to a chaotic mass of criticism, often illogical and ignorant, which deceives the masses, clouding the saner conclusions of those whose views are really worthy of attention. The danger of totalitarian government becomes apparent when a healthy gentle curbing of the Press develops into wholesale muzzling and the papers are only allowed to publish that which the Government desires and orders.

[1] See postscript to the chapter page 374.

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I have space only to call attention to one reform, namely, the corporation system of regulating trade, manufacture and also of government. I will therefore give the briefest outline of the principles of this organization. In Italy there has been no strike for the last fourteen years. Just imagine what that means in the saving of money and privation to the working class! Yet wages have increased *pro rata* with the cost of living, and among the working classes as great contentment exists as in England, if not greater. The essential difference between Italy and England is that in Italy there are no trade union officials, that is, there is no body of men whose existence depends on agitation and strikes, and who, should industrial peace be permanently established, would lose their jobs. In Italy every trade, art, and profession, doctors, actors, dentists, etc., has its own corporation. These in the first instance consist of separate local committees of men and also of employers. These discuss their own jobs, and, if necessary, meet for joint discussion on matters of common interest, or when differences of opinion arise. These joint meetings are presided over by a Government chairman. Above these local committees are regional committees, composed of delegates from the local committees, to which questions can be referred. Differences of opinion as regards wages are settled by a court whose decision is final. Above the regional committees comes the grand committee, composed also of delegates from the regional committee, and this now forms the House of Commons. It will be seen how, by this arrangement, local conditions, as well as national considerations in every trade and profession, receive full attention; how the views of labour and employer are put forward and are thoroughly threshed out and differences settled; how a system of national wage for each trade can be introduced and yet varied according to local conditions. The system is both rigid and elastic—and above all, agitation is avoided entirely. No single individual would gain by a strike, everyone would lose. So matters are amicably adjusted, and so far as human nature permits, contentment reigns. Of course, so reasonable a system would not suit this country. No! The freedom of the individual to do as he likes and upset his neighbours, produce misery and national

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loss of time and money, would be taken away. No, it would not suit what in our conceit we call our national genius—which being interpreted is indisciplined egotism.

Let me conclude these inadequate remarks on Italy by adding that it is not for me to criticize the Imperial aspirations of that country. A nation rich in tradition is bound to compare the past with present world possessions. When the Abyssinian campaign ended, a forced loan was raised on properties in Italy. This, as at the time I did not hesitate to say, I paid with pleasure as I looked on it as my tribute towards the civilization of that slave-ridden country. Italy was the only nation that could colonize and save Abyssinia, for that country needs industrious peasants accustomed to work in a hot climate and live on semi-tropical food, and engineers who had specialized in road engineering. These attributes were well met with in Italians. Therefore Italy, and Italy only, of the European countries could bring good government and civilization into Abyssinia. Why not, therefore, now acknowledge the fact, and be glad that they should have taken up the white man's burden? Why not wish them a happy result, and sympathize with them over the heavy strain they will have to endure before the great work awaiting them is accomplished?

Italy, without doubt, casts admiring and perhaps longing eyes on our Empire. But it is doubtful if the Italians thoroughly realize the difference in cost between an Empire created by trade and one manufactured—so to speak—by conquest

Our Empire has been built up stone by stone, brick by brick, during hundreds of years. Commerce initially penetrated distant regions, and gained the first foothold. Then gradually our influence grew and expanded until a form of local government became necessary. After such territory had become large, and its government too onerous for private enterprise, the Home Government stepped in and colonies and dependencies resulted.

This gradual process spread the cost measured in gold and blood over centuries. A very different thing to the cost, in both these precious assets, which is involved when backward and inhospitable territory is gained by force of arms.

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As regards later happenings, I will content myself by raising one doubt. Can Italy stand the burden of Empire? Empire is a costly luxury. It swallows up much money and yields little return. Not only is a vast initial expense incurred in developing a country, but other contingent expenditure becomes necessary. A navy is essential to keep open trade routes and ensure sea communication, air force and army have to be increased—and in these days, what is going to be the return? Empire conjures up vast visions of prestige and possessions, but, when boiled down to hard profit and loss account, to what do these in reality amount? Ideologically an empire is a golden asset, but, practically, is it worth the price that must be paid in these days, in the sweat, self-denial, and privation of a nation?

Empire is as much a luxury to a country as a five-thousand-ton yacht would be to an individual. Is Italy as happy as if the money that she has paid in creating, and will have to pay for maintaining her huge armaments, had been devoted to internal improvements? It is not for me to say. I have always looked on Signor Mussolini as the greatest man who has ever governed a country. What Italy owes to him only Italians know. Let us hope he will continue to steer the country between the shoals which loom large in the future. I have lived now a long time in Italy, and love the country and the people, and I can only hope that the best counsels, namely, those which provide the greatest happiness for the nation as a whole, will, in the end, prevail.

From Italy to Monte Carlo is not a far cry. The Casino at that seductive place has always had an attraction for me, which, in days gone by, I was able to gratify; but now, owing to the attentions of the Chancellor of the Exchequer, and other causes, I have no cash to spare for further flutters.

Let me at once say that in order to enjoy gambling, and also to be able to stand a fair chance of winning, it is absolutely necessary that he who stakes should not care a brass farthing if he is going to win or lose. The money staked must be a holiday surplus, and there must be no *arrière-pensée* as regards its loss. The worry of a possible loss is bound to cramp his style.

The system I liked best is that called *Tierce et tout.*

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This is played on the even chances. It consists of dividing a certain sum of money into three parts, and to commence by staking one of the thirds. If you win, you add your winnings to your pile and stake a third of your new sum. If you lose, you must stake the remaining two-thirds. What you are really doing is to bet against the table winning twice in succession. But the charm, to my mind, lies in fixing on a definite number of coups up to which you will play, and then leaving off. It is here that determination and resignation both come in.

Take an example: Suppose you determine to play for six coups. You start with nine louis. You first stake three. If you win you add three to nine, and stake one third of twelve, or four louis. If you win again you have now sixteen louis; you stake the nearest to one third of sixteen, or five louis. Suppose that on your next coup you lose, you must now stake your eleven. If you win you have twenty-two louis, and your next stake is seven. If you win you will have twenty-nine. Now comes the temptation to leave off. Why risk any more? But if determination carries the day, you stake and perhaps lose your nine louis; you still have twenty left on a pile in front of you. Will you risk them or knock off? That is the crucial question. The temptation to do so is great; but fixed determination should carry the day.

I have always looked on this system as a good one to teach determination and indifference to fortune. Therefore I should like to see Admirals and Generals, who prospectively may command in wartime, put through a short course of this gamble at Monte Carlo.

How the 'unco' guid' would howl at the suggestion! At all events, two things would be taught: first, to stick to prearranged plans through thick and thin; and, secondly, not to care two hoots if things go wrong and plans fail, but to start in and try again.

Now a few words about my literary ventures; and let me preface these with the confession that I have ever found it most difficult to write any book without unintentionally offending someone. Either I have said too little or too much, and committed some totally unintentional slights. The reefs that margin literature are numerous, and I have found safe navigation to be most difficult.

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I was at Dover at the time that the Battle of Jutland was fought, and had no time to examine the details of that action; but such accounts as were vouchsafed to us by the Press gave me the impression that it had been a poor affair, and that Sir John Jellicoe, most certainly, had not distinguished himself. When, however, after the War had ended, I came to read the true accounts of the fight, especially that given in the *Official History of the War*, I came to see how false had been the impression that I had previously gained, and how extremely well Sir John had conducted the action.

Two things then annoyed me greatly. One was the conspiracy of misrepresentation that was on foot to blame Lord Jellicoe and exalt Lord Beatty; and the other was the fact that Lord Beatty never uttered one word in defence of his old Commander-in-Chief, nor, apparently, took any steps to attempt to end the campaign that was being carried on.

While in this frame of mind I read an article in the Press purporting to be the account of a recent interview with Admiral Scheer, who had commanded the German High Sea Fleet at Jutland. The article was highly uncomplimentary to Lord Jellicoe, and, undoubtedly, was read by tens of thousands of people, and believed by them to be true. The moment Admiral Scheer had his attention called to the matter, he wrote a letter, which was published in the *Daily Telegraph*, pointing out that the article in question was a garbled account of an interview that had taken place *some years before*, and ended his letter by saying: 'In his report the English correspondent does not completely suppress the explanation given by me; but, in a not very gentlemanly manner, has not hesitated to deceive the English reader by the misleading title, "How I escaped at Jutland," and by a false date.'

It might have been expected that the newspaper in question would have at once published this *dementi*, but this was not the case.

Another journal carried the matter further. Mr. Filson Young, who had been on board the *Lion*, Admiral Beatty's flagship, during the action, published an article which contained many misstatements, together with a totally

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incorrect diagram. I then fairly boiled over. I knew that Lord Jellicoe would not reply, so I took up the gauntlet, without his knowledge or consent, and wrote to both papers. Neither would publish a refutation of the untruths they had published. This made me determined to put a stop to the campaign if I could do so. I therefore dipped my pen into vitriol and wrote a book called the *Jutland Scandal*. The 'scandal' was the campaign of untruths that was being carried on by the enemies of Lord Jellicoe. Perhaps some may boggle at the word 'enemies,' and think that it was only convinced criticism that impelled the dead set that was made at Lord Jellicoe, but I know otherwise; moreover, I know a good deal more than it would be wise to write.

In the *Jutland Scandal* I purposely carried the war into the enemy's camp, and in no way minced matters. The result caused a rude shock among those who had previously thought that they could malign Lord Jellicoe without incurring any retaliation.

Mr. Filson Young at once tried to stop the publication of the book by bringing an action against me for infringement of copyright; basing his plea on the fact that, in order to criticize the various statements he had made, I quoted his article verbatim.

My solicitors engaged counsel, neither of whom could say whether or not I really had become liable for an act of infringement. I maintained that in order to criticize, it is necessary to quote an article verbatim; since, if the statements are paraphrased, they are no longer the statements of the writer and are therefore not subject matter for criticism; and, still further, unless the whole article is quoted, the critic is open to the charge that he has selected excerpts and robbed the portions that he had quoted of their contexts. Such a statement is apt to go down with the public, since they are not in a position to judge whether the context was, or was not, of importance. My senior counsel thought that I should lose the case, the junior was of opinion that I should win it. They both agreed that the point at issue had never been raised before, and that the decision rested entirely on what view the judge might take of the matter. From a common-sense point of view I contended that I had done the sensible thing, and had in no way robbed Mr.

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Filson Young by quoting an article that no other editor would be likely to accept. In the end Mr. Filson Young withdrew the case. I was sorry in a way, because the action would have been a good advertisement for the book, and therefore aided Lord Jellicoe's vindication. It is not improbable that this consideration may also have weighed with some of those responsible for the campaign.

Lord Jellicoe, as well as a good many other people, considered the book too vitriolic; personally, I am quite impenitent. I was out to stop a campaign of slander that was creeping insidiously through the length and breadth of the country. I am happy to say that I helped considerably in so doing.

The only other occasion on which I had to intervene was when Mr. Winston Churchill's Volume II of the *World Crisis* was published. I have always been at a loss to understand how the chapter on Jutland in that work ever came to be written by so brilliantly clever a man as Mr. Churchill. That he received help (Heaven save the word!) from a naval officer is confirmed by an appreciation in the preface of the book.

After reading Mr. Churchill's account of Jutland, I appreciated that the only method of circulating a correction was to do so in book form; and, as I knew that certain persons were of opinion that other portions of the book lacked accuracy, I approached Major-General Sir Frederick Maurice on the matter. In the end a book was published under the title of *The World Crisis by Mr. Winston Churchill: a Criticism*, in which Sir Charles Oman, M.P., Chichele Professor of Modern History at Oxford, controverted the conclusions contained in the chapters of 'The Blood Test' and 'The Battle of the Somme'; Major-General Sir W. D. Bird dealt with the strategical portion; Major-General Sir F. Maurice corrected Mr. Churchill's views on 'Joffre and Gallieni at the Battle of the Marne'; and I put in a chapter on the errors in the account of Jutland. I need not pursue the matter further.

It may be asked with some reason why should I, who was not directly concerned with Lord Jellicoe's conduct, have entered the lists and tilted at the inaccuracies of current writers? I can only plead that, having been maltreated and

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maligned myself, I had a great fellow-feeling for those who were being similarly treated. I hate to see white changed to black, whether intentionally or through ignorance, and, therefore, I felt constrained to undertake a knight-errantry which earned me considerable unpopularity with a section of naval officers. I remember one occasion walking towards an Admiral holding a high appointment, whom I had known when in the Navy, and who was partaking of a cocktail and biscuit. But, before I could speak to him, he turned away to avoid me. Thank goodness he, in his emotion, choked badly over the biscuit, thus destroying the dignity of his gesture, and affording me immense amusement!

This same impulse (perhaps a stupidly quixotic one) for righting wrongs led me to remark on what I considered to be the unfair treatment accorded to the work performed by Rear-Admiral Carpenter, V.C.[1]

While on the subject of the Battle of Jutland I should like to call attention to two points, anent that battle, that have not received the attention they deserve.

In my biography of Lord Jellicoe I made the statement that, had all the ships of the German Fleet present at that battle been sunk, the strategic position would not have been altered.

Some myopic critics, seizing on this, interpreted it as an apology for the smallness of the visible benefits resulting from the battle. Nothing could have been farther from my intention. It was merely a statement of fact. What those critics have entirely overlooked is that there were six German dreadnought ships left behind in Kiel, or the Elbe, in different stages of construction, while a seventh, the *König Albert*, was under refit. Two of these were completed a very few months afterwards, while two, the *Baden* and *König Albert*, were actually ready for sea in June 1916. At the time it was believed that four, if not five, of them would be in a position to put to sea within a few weeks.

Now for a plain statement of facts:

1. If all the German battleships had been sunk at Jutland this could not have been done without a loss of

[1] See pages 288–289.

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ships on our part. This is a point to which critics have not given sufficient attention.

2. Our losses, in dreadnought battleships, would probably have been numerically greater than that of the Germans, because our magazines were more unprotected than those in the enemy ships. In fact, in a bull-at-a-gate fight, we probably should have lost ships in the same way, and for the same reasons, that the *Queen Mary*, the *Indomitable*, and the *Invincible* were lost. But, to be on the safe side, let us assume our losses to have been equal.

3. The six German pre-dreadnoughts may be given credit for sinking one British dreadnought.

4. At a battle on the morning of 1 June there would have been twenty-six Grand Fleet battleships available, *Warspite* and *Marlborough* being already out of action.

5. There would have been sixteen German dreadnoughts present.

6. Therefore, if all these had been sunk, we should have had, at a maximum, nine of our dreadnoughts remaining, all in a battered condition.

7. The Germans, so far as we knew, would have had four or five dreadnoughts in the Elbe or at Kiel.

8. We therefore must have kept a battle fleet of at least eight dreadnoughts at Scapa to oppose those in the Elbe in case they came out.

9. It is difficult to assign exact positions to the destroyers of the two fleets on that misty morning. All that can be said with exactitude is that there were about fifty Grand Fleet destroyers scattered about, in an area of, say, twenty-miles' radius. The various night attacks had caused a fairly wide dispersion. The High Sea Fleet had about thirty-six destroyers more or less in company. Our superiority in light cruisers would have been counterbalanced by the dispersion of our destroyers. The chances are, therefore, that our losses in this class of vessel would have been about equal. The two flotillas of German destroyers ordered home through the Skagerrak, and those escorting the damaged light cruisers, would at all events have been immune—and

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would have survived the battle. The Harwich destroyers would have been in like case.

10. The number of destroyers that should be kept with a Battle Fleet is not directly proportional to the number of battleships. A certain number are required to guard the Fleet and attack in a general action. It is more probable that the number required will depend upon the number that may be expected to accompany an opposing fleet. This being the case, very few of the destroyers remaining to the Grand Fleet after the action could have been withdrawn and relegated to other work.

We therefore see that the strategic position would have remained the same. Our Battle Fleet would still have been at Scapa or the Forth, the German Battle Fleet in the Elbe. All that would have resulted from such an action would have been that the numbers on both sides would have been reduced.

The second point of interest is the small amount of use that the armoured cruisers were to the Grand Fleet. I regret, now, that I never asked Lord Jellicoe why he kept those vessels with the Battle Fleet. They were too slow to be of any use as scouts, and not strong enough to do more than provide a backing for our second-class cruisers against a like class of enemy vessels. Not only were they, more or less, useless, but they became a nuisance when the Battle Fleet was coming into action in misty weather. They were not, as a matter of fact, able to steam fast enough to take up their assigned station ahead of the Battle Fleet during the run south that preceded the Battle of Jutland. In the Battle of Jutland two such cruisers, the *Defence* and *Warrior*, were sunk during the initial stage of the fight; and the *Black Prince*, which at that time had lost touch with the Battle Fleet, was sunk by the High Sea Fleet during the night.

It seems to me that the reason for their presence with the Grand Fleet dated back to the early days of the War, when we had a lack of battle-cruisers, the *Princess Royal* having been detached for escort duty and the *Inflexible* and *Invincible* having gone to the Falklands, and they had remained on after that deficiency had been made good. In the early days of the War they would undoubtedly have been

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of great value on distant stations. If the four which were present at Jutland had been under the command of Rear-Admiral Sir Christopher Cradock, the Battle of Coronel would have had a totally different ending. It appears, judging from after events, that they would have been infinitely more valuable dogging the German cruiser squadrons in the Pacific than attached to the Grand Fleet.

It also appears to me that one lesson to be learned from the Battle of Jutland is the necessity, in a fleet of the dimension of the Grand Fleet, of pruning away all auxiliaries which are not absolutely necessary. This is more than ever the case when approaching the enemy in a misty region like the North Sea.

While still at the Ministry of Munitions I started to write an account of my time of command of the Dover Patrol. I was anxious to do this while details were still fresh in my memory. I was in the habit of walking down after dinner to my office and there writing from nine till midnight. The absolute quiet that obtains in a dead office is most conducive to writing—and, of course, then there was little war-time traffic at Westminster.

I quote the following from a letter I received after the publication of the book—as an extraordinary example of accidental plagiarism.

" On page 285 there is a paragraph as follows :

> ' Experience is a thing so subtle and unobtrusive that it is often little appreciated by those who have the ruling of affairs, yet it is the paramount factor in planning all operations.'

In a paper I [Mr. Oscar Harmer] read in 1884 there is the following paragraph :

> ' Experience is a thing so subtle and unobtrusive that it is often little appreciated by those who have the ruling of affairs, yet it is the paramount factor in most, if not all undertakings.' "

Yet by no conceivable means could I have seen Mr. Harmer's paper.

The book was unfortunately an expensive one, owing to the numerous plates and charts it contained. Therefore, some years afterwards, I brought out an abridged edition

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so as to bring the cost within the pockets of such officers and men who served under me who may have wished for a record of the work in which they assisted.

About 1926 I was approached with a view to my writing the Life of Admiral of the Fleet Lord Fisher. Unfortunately, six years had been lost, in which time the memory of Lord Fisher's personality had partly faded. In these days of rush, hurry, and kaleidoscopic change, men's memories are short—great men die and soon become forgotten. I cannot add Lord Fisher's name to the already long list of those for each of whom the claim has been advanced that 'he won the War.' But this much I can say, that if it had not been for Lord Fisher we might not improbably have lost the War. He did not win it, but most certainly paved the way for our doing so by the wholehearted services he rendered in reorganizing the British Navy. A couple of years before Lord Fisher's death I met him in St. James's Street and he then told me, in his usual amusing style, that his biography was in a strong box in London and that no one would dare to publish it except a lady in the United States. He afterwards wrote *Records* and *Memories*, and the autobiography apparently never materialized.

In writing his life I was continually coming across difficult passages in his letters and writings about which I should have much liked to have been able to consult him. This led me to suggest to Lord Jellicoe that he should have his biography written during his lifetime. I never anticipated that he would eventually ask me to write it. This he did, however, after consulting Sir Archibald Hurd, a friend in whose judgment on literary matters he had full confidence. I had doubts about accepting the task as, at the full age of seventy-three, memory is not too acute, and, from experience, I knew how great is the assistance memory affords in writing a biography with a few hundred papers to sort, epitomize, and digest, and to remember where excerpts have come from and in which docket a particular reference is to be found. All this sort of routine work is immensely aided by memory. Moreover, I had no claim to wielding an expert pen. However, I accepted, largely because I had lived my life in the Navy abreast that of John Jellicoe in all

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ranks, and I considered, perhaps too egotistically, that I had a better experience of the problems that confronted us at the different stages of our careers than, probably, had fallen to the lot of any other officer. Further, I was convinced that his life should be written by a naval officer and not a civilian, since, although a more facile pen would add grace and charm to the biography, yet there were many phases of Lord Jellicoe's life where an insight into the Navy and naval problems was essential. So I accepted the task, which after all was, to a great extent, a labour of love.

Lord Jellicoe died a few months after I had commenced the work. In the intervening months I had not hurried, as I never foresaw such a loss to the country occurring so soon. I had only completed one of the early chapters and a rough draft of a portion of the Battle of Jutland. So I was once more faced with the disadvantage of not being able to refer to the man whose biography I was writing. I had, however, fortunately, the great help of Admiral Sir Frederic Dreyer, who had served with Lord Jellicoe as Captain of the *Iron Duke*, and afterwards accompanied him on his voyage round the world in the capacity of Chief of the Staff.

I had in the intervening years written other books, a couple of novels and two primers. One of the latter was called a *Simple Guide to Wireless*, which aimed at explaining the bare underlying principles of that marvel of marvels to children, and those who were innocent of all knowledge of electricity. The other one, *The Motor Car and How it Works*, aimed at doing the same for all who were ignorant of the most elementary mechanics. Also, in a volume entitled *A Naval Scrap-book* I wrote an account of my experiences up to the year 1900, a book to which this is a sequel.

In 1921 I became a Justice of the Peace for Hampshire, and in 1932 succeeded Mr. David Faber as Chairman of the Romsey District Bench. David Faber was an excellent chairman—very sound, very courteous, and very fair. He could address severe remarks to those who deserved them, but so urbane was his manner that at times I have thought that I would sooner have been fined by him for some trivial offence than had the case dismissed by some other magistrates of my acquaintance.

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There has been a lot of nonsense written in the papers about the age at which magistrates should retire. There are bound to be instances of magistrates continuing to remain on the Bench after their hearing or sight has rendered them unfit for the work. But so long as a man remains physically and mentally fit, the older he is the greater his experience and the more valuable he becomes.

The efficiency of a Bench depends primarily on the chairman; and, for this reason, those who make appointments to a Bench should keep in mind the necessity of having a succession of good men who will in time have to fulfil this duty. Lord Lieutenants, and their advisory committees, should bear this in mind. There are a number of excellent magistrates who fail completely when in the chair. In the first place, a chairman should have thoroughly mastered the rules of evidence, and he should be in full possession of his faculties, especially quick brain-working and hearing. He must have trained himself to concentrate thoroughly on the hearing of the cases, and be ready at once to stop prejudicial statements being made, and to warn a witness that he need not answer when improper questions are put to him. He must be able to sum up clearly the important points when the Bench consider their findings and sentence in camera. He must express his own opinion fully, but be careful not to attempt to over-ride the opinion of the other magistrates without explaining his reasons for dissent. He must be prepared to make appropriate remarks when delivering sentence, explaining clearly the opinion of the Bench on the magnitude of the offence, but he should never lecture a defendant. The duties of a chairman are much increased when, as so often is the case, a defendant is not represented by a solicitor. He must then afford him as much assistance as he is able in conducting his defence, without in any way becoming his advocate. He must also put any questions to prosecuting witnesses, which, in his opinion, the defendant should have asked, so as to ensure justice being done. He should never hurry a case, but allow both sides a good latitude as far as time is concerned. This is particularly necessary when solicitors are engaged, for both sides like to get their money's worth out of the advocates. At the same time an excessive repetition of the

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same questions should be checked. The chairman should also make written notes of all important times and dates, and the gist of all important statements by witnesses. This is most necessary, not only to check memory when discussing the case with other members of the Bench, but, also, because advocates are at times apt to make mistakes, often of importance, in addressing the Bench. In motor cases he should make his own sketch of the position of the car, or cars, on the road so as to ensure that he thoroughly understands the conditions. It is of great assistance to the Bench if the chairman is also a driver, since he then has a far better appreciation of the essential conditions of an accident than a person who has never driven a car.

There has been a lot of hot air expended over the question of motorists and magistrates, coupled with demands for special courts. For this I see no reason. It would, of course, give some of the advocates of the reform a chance of obtaining paid employment, and, naturally, prospective stipendaries would like to see the innovation materialize. Also letters to the Press supporting this practice provide a safety-valve for aggrieved motorists. But no tribunal could be fairer than a Bench composed of men and women who themselves drive and who have no axe to grind, except the one principle of ensuring the safety of the public. A certain number of cases, such as excess of speed and licences, can be met by a more or less hard and fast scale; which might be universally adopted as a guide to the Benches throughout the country. But nearly all other cases can only be dealt with according to the circumstances of each particular case. Fines should vary, not only according to the gravity of the case, and the previous record of the individual, but also according to his means. A fine of three pounds to a man earning two pounds a week inflicts more hardship probably than one of twenty pounds to a rich man. Far the best way to deal with improper driving on the part of rich men and women is by an adequate suspension of licence. This they really feel, whereas merely signing a cheque is hardly an inconvenience.

The fact of a man being a wage-earning driver should only be taken into consideration in awarding a fine and the duration of suspension of a licence, but not as regards

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suspension. If a man is a really dangerous driver he is better off the road, and there are many safe drivers out of employment and ready to take his place. The safety of the public should weigh more heavily with the Bench than a sentimental regard for the driver and his family.

Some of the most difficult and important cases that come before the magistrates are those of bastardy. It must not be forgotten that a maintenance order, say, of five shillings a week for fourteen years, really imposes a fine of £175, as well as inflicting a certain amount of social stigma. I am convinced that all magistrates will welcome the assistance—even though it may only be of value in certain cases—of the new blood-test regulation.

Family troubles always present a difficulty, and my experience is that only in a few cases can such differences be permanently settled. As a rule matters have gone too far before the case is brought before the Bench.

In my opinion one of the most retrograde steps of late years has been the practical abolition of birching for boys and youths up to seventeen years of age. I am firmly convinced that half of the juvenile crime would be abolished if birching was reintroduced. I consider that the extent of our juvenile crime is a disgrace to the country and is due largely to the milksop attitude of the Home Office. 'Father's strap' used to be the strongest factor in family discipline, and the trouble given by children can often be traced to an indifferent or weak-minded father—that is, one who fails to use his strap. The Bench should be empowered to see to this omission.

The same applies to flogging. Brutal cases should carry a punishment a man feels. Our milksop theorists are doing as much to undermine the suppression of crime in the country as our pacifists did to undermine our authority abroad. When the country had commitments all over the world the theorists reduced our navy from a two-power standard to less than a one-power standard. Hence the impossibility for us to restrain outrages on our fellow-countrymen in the Far East; for we had no ships to spare to send there to uphold our authority.

So it is with punishment. Our women and children require protection from blackguards, but theorists again

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care more for the hide of the ruffians than the lives and virtue of weak and frail law-abiding citizens.

I am no upholder of brutal punishments, but there is little doubt that physical pain acts as a great deterrent to a certain class of criminal. I have in my mind one incident. In one small ship in which I served, a young seaman refused to do any duty. He was consequently put under arrest pending the investigation of his offence. He then amused himself by shouting out reviling and repulsive remarks against all the officers, from the Captain downwards. In a small ship his voice echoed the whole length of the mess-deck, so this behaviour had to be stopped. The First Lieutenant, the Master-at-Arms, and a corporal took him to the lowest depth of the ship and shortly returned, closing the hatch behind them. The shouts continued for a few minutes and then these gave way to cries for mercy. The hatch was lifted and the man was told by the First Lieutenant that he would remain there for the stipulated time of half an hour. When the time had passed the man was released and was completely tamed. He never again gave the slightest trouble, but became a reformed character. The only comment I feel called on to make is that that young fellow was saved from imprisonment and probably a career of crime by the administration of short, sharp, physical pain.

I need hardly enlarge on the value of the assistance given to the Bench by the justices' clerk. It is his business to keep up to date and advise the Bench on all questions of law on which there may be any doubt. Nor is his assistance confined to the court, but he should exercise wise discretion as regards the issue of summonses. Many a silly squabble or fit of temper can be adjusted without being brought into court by judicious advice when a summons is applied for. Naturally, not being a magistrate, he has no voice in the decisions of the Bench. But in the award of punishment, his advice is often of considerable value.

A large number of motoring offences were dealt with during my period of office. Experience gained from these, and from thirty-three years of driving in England, and twenty years' driving abroad, was bound to afford a good insight into the causes of road accidents. My conclusions may be summed up briefly as follows.

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The main cause of accidents in which motorists are to blame is absence of road sense. This is of two kinds: first, that of the young driver who will in time learn; and, secondly, some drivers who will never improve because they suffer from one or more of the following disabilities: nervousness, want of attention, slowness of brain, inability to draw inferences or to judge distance or speed. These are constitutional ailments which no amount of instruction can overcome.

There is, in my opinion, little doubt that drink is the cause of many accidents. People who get drunk either land themselves in the police court or kill themselves, and probably others in so doing. These are comparatively few. But there are numerous cases, daily, throughout the country, where a glass or a couple of glasses of whisky cause accidents. Drink affects people in different ways. I have known cases where a man was speechless from the effects of drink, yet he could walk a plank with the greatest of ease; and, again, I have seen a man who was perfectly sensible and could talk quite rationally, unable to stand up. The same is true of people who imbibe only a small amount of liquor. They may be perfectly sober, yet some become slow-witted and their brain takes longer to appreciate a situation. Others become rash, take just a little more risk than is safe in daytime and cut in; while, at night, they drive fast in the glare of a headlight and as likely as not knock over a bicyclist. If no one drank spirits, or cocktails, within an hour, or better still two hours, of driving a car, a considerable saving in accidents would result.

One cause of accidents that has more than once come under my notice is want of appreciation that it is often more dangerous to pass a slow-moving vehicle than a fast one, simply because of the impossibility of dropping back quickly. If when passing a timber cart, or lorry with a trailer, an incautious driver sees suddenly a fast-moving car coming towards him, he may take as long as eight seconds to drop back, during which time an oncoming car can have travelled well over two hundred yards. It is useful to remember, when dealing with motoring cases, that two miles per hour is very nearly three feet a second. This arithmetical ration will often enable a Bench to discard wild estimates on the part of witnesses or advocates.

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It is well also to correct, at times, the estimates of time as given by witnesses. To them what they call a minute is in reality of about five seconds duration. The famous example of this proper appreciation of time in a criminal case was in the Maybrick trial, when the whole defence rested on the impossibility of fly papers having been put into a tea-pot in so short a time as one minute. The Judge ordered silence in court, put his watch down, and the whole court stayed silent for one minute. It has been said that the duration of that minute was never forgotten by anyone who was present in court. It absolutely knocked the bottom out of the defence.

In October 1935 I gave evidence before the Royal Commission on the private manufacture of arms and trading therein. I then advocated the creation of a 'shadow Ministry of Munitions.' Briefly, such a skeleton could easily have been created by selecting at once the men who would take over the work of heads of each section of the Ministry when it was definitely brought into being. They would, in normal times, carry on their usual avocations, but they would each have been provided with a capable whole-time assistant, whose business it would have been to prepare lists of the firms able to undertake munition work, the capacity of each such firm at the moment and the capacity for expansion in case of emergency. Further details of the material, jigs, gauges, and machines required on expansion would have been thoroughly gone into. Beyond this the names of men who would be required as managers would have been recorded and these notified of their selection. Similar action would have been taken as regards the clerical, financial, and Invention Departments. In a couple of years' time complete mobilization lists would have been available and the actual articles for manufacture allocated to each firm.

The cost would have been about £20,000 a year. For this small expenditure a large amount of money would have been saved and supply greatly accelerated on the outbreak of the War.

The Commission, however, it appears, considered that a committee of the Cabinet could efficiently carry out the vast work of organization.

The results obtained in 1937–1938 proved the opposite.

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Looking back on life, my one overriding impression is one of failure—successes such as they were fade, and it is the mistakes, lost chances, stupid acts which loom up largely. It is true that while writing this book, when the past has almost been re-lived for a few brief minutes and once more become the present, I have again revelled in small successes and achievements; but now that the review has been finished, once more these small pleasures are blotted out by the mistakes that I have made. I wonder if others feel the same; or, if with some the reverse happens, and their achievements blot out their errors? At all events, it matters little—only one thing is certain, Life has been a great experience, a grand adventure, and at the same time replete with great happiness. What matters it if also it is a stupendous mystery? Why we are here and what purpose we are fulfilling we shall never know. So why worry about that which is incomprehensible? All I know for certain is that if I were to live again, without memory of my life on earth, and if once more in some planet I started with the same heredity, lived through the same environment, and with everything external to me the same as that which I have here experienced, then I should again do exactly as I have done in my lifetime. Thus, so far as I am concerned those two futilities, conceit and remorse, have no meaning. One is useless and the other absurd.

If, on the other hand, I were offered a new life on this earth with the chance of being of any nationality or of any degree I would unhesitatingly refuse to enter upon so appalling a gamble. Hence my contentment with what has been my lot is unruffled and supreme.

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Postscript

SINCE WRITING THE ABOVE A NEW WAR HAS BURST UPON US, and, to our surprise, we found that the Navy, Army, and Air Force were all prepared; for once a muddle seemed to have been avoided. But, alas! the Civil Service intervened to keep up the old tradition. A.R.P. was started, governed by the proviso that no expense was to be spared, and lavish expenditure became the order of the day. Then evacuation was seized on: children were torn from their parents; young wives wrenched away from their husbands; and family life was threatened with destruction. Mind you, this was not to last for a month or six weeks, but for three long years. The old spirit of British pluck was assailed, and a new creed of fear and egotistical self-preservation implanted into the minds of the rising generation. No wonder, then, that within a month sixty per cent of these harassed rabbits had returned to their proper burrows.

Meanwhile the commandeering of hotels came into force: Under the urge of panic old-established clients, managers and staff were bundled out into the street at twenty-four to forty-eight hours' notice.

Then control was started. Democratic government was practically abolished, and the administration of the country turned over to a horde of controllers, largely men without practical experience of the businesses they were called on to control. The result has been that trade—on which, after all, the successful outcome of the war depends—has been badly hampered, and the excellence of British manufacture degraded into 'pool' products. There is at the moment a serious proposal on foot to appoint a controller to control controllers. Heaven knows how it will end! But at all events, if we do manage to win the war we shall have once more reason to boast of our capacity for 'muddling through.'

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APPENDIX I

The following were the first officers and men appointed to the Submarine service September 1901.

Lieutenant F. D. Arnold Foster.
Lieutenant S. Bowle-Evans.
Lieutenant J. B. Moreton.
Engineer Robert Spence.
William R. Waller, P.O. 1 cl.
F. C. Knight, P.O., 1 cl.
Joseph B. Rees, P.O. 1 cl.
Ernest E. Neville, P.O. 1 cl.
William J. Robinson, E.R.A. 3 cl.
William Muirhead, E.R.A. 3 cl.

APPENDIX II

MINISTRY OF MUNITIONS OF WAR

MUNITIONS INVENTIONS DEPARTMENT

ADVISORY PANEL

Admiral Sir R. H. S. Bacon, K.C.B., K.C.V.O., D.S.O., Controller.
Colonel Sir H. E. F. Goold-Adams, K.B.E., C.B., C.M.G., R.A.
Major W. H. D. Clark, O.B.E., Assistant Controller.
G. S. Albright, Esq., M.A.
W. R. Bousfield, Esq., K.C., F.R.S.
Professor H. L. Callendar, F.R.S.
Charles G. Carpenter, Esq., D.Sc., M.Inst.C.E.
Professor F. J. Cheshire, C.B.E.
C. J. Bowen-Cooke, Esq., C.B.E., M.Inst.C.E.
Professor J. Norman Collie, Ph.D., D.Sc., LL.D., F.R.S.
W. R. Cooper, Esq., M.A., B.Sc.

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Lieutenant-Colonel A. W. Crossley, D.Sc., F.R.S.
Major Leonard Darwin, late R.E., F.R.C.S.
Sir Horace Darwin, K.B.E., M.A., F.R.S., Assoc.M.Inst.C.E.
Sir James J. Dobbie, M.A., LL.D., D.Sc., F.R.S.
Sir Arthur Duckham, K.C.B.
Alfred Dobree, Esq., C.B.E.
Professor F. G. Donnan, C.B.E., M.A., Ph.D., F.R.S.
S. Z. de Ferranti, Esq., D.Sc., M.Inst.C.E., M.I.Mech.E., M.I.E.E.
R. C. Farmer, Esq., O.B.E., D.Sc.
Sir Richard T. Glazebrook, C.B., M.A., D.Sc., F.R.S.
Professor Andrew Gray, M.A., LL.D., F.R.S.
Sir Robert A. Hadfield, Bart., D.Met., D.Sc., F.R.S., M.Inst.C.E., M.I.Mech.E.
Professor J. S. Haldane, C.H., M.A., M.D., LL.D., F.R.S.
D. T. Heap, Esq., M.Inst.C.E., M.I.Mech.E.
Colonel N. B. Heffernan, R.A.
Professor A. K. Huntington, A.R.S.M., M.I.M.E.
Brigadier-General Sir L. C. Jackson, K.B.E., C.M.G., R.E.
Sir Alexander B. W. Kennedy, LL.D., D.Eng., F.R.S., M.Inst.C.E., M.I.Mech.E.
F. W. Lanchester, Esq., M.Inst.C.E.
Professor A. P. Laurie, M.A. D.Sc., F.R.S.E., LL.D.Ed.
Michael Longridge, Esq., M.A., M.Inst.C.E., P.I.Mech.E.
W. H. Maw, Esq., LL.D., M.Inst.C.E., M.I.Mech.E.
Sir E. W. Moir, Bart., M.Inst.C.E., M.Am.Soc.C.E.
Major Sir Henry Norman, Bart., M.P., P.C., Assoc.I.E.E.
Major F. G. Ogilvie, C.B., M.A., LL.D.
R. Redpath, Esq.
E. J. Russell, Esq., D.Sc., F.R.S.
Major-General Sir George K. Scott-Moncrieff, K.C.B., C.I.E., R.E., Hon.M.Inst.C.E.
Sir John Snell, M.Inst.C.E., M.I.E.E.
Sir F. Wilfrid S. Stokes, K.B.E., M.Inst.C.E.
Professor the Hon. R. J. Strutt, M.A., F.R.S.
James Swinburne, Esq., F.R.S., M.Inst.C.E., M.I.Mech.E., M.I.E.E.
Sir Richard Threlfall, K.B.E., M.A., F.R.S.
Professor Sir Joseph J. Thomson, O.M., D.Sc., LL.D., Ph.D., P.R.S.
Major T. G. Tulloch.
A. J. Walter, Esq., K.C., LL.B.
C. J. Wilson, Esq.

Secretary to Advisory Panel :
H. W. Dickinson, Esq.

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AIRCRAFT EXPERIMENTAL SECTION

Section Director

Major A. V. Hill, M.A., O.B.E., F.R.S.

Personal Assistant

Mr. A. L. Lankester.

Portsmouth Sub-Station

Captain R. H. Fowler, M.A., O.B.E., R.M.A.
Lieutenant E. A. Milne, R.N.V.R.
Lieutenant A. C. Hawkins, R.N.V.R.
Lieutenant D. R. Hartree, R.N.V.R.
Lieutenant T. L. Wren, M.A., A.S.C.
Lieutenant C. Mayes, R.G.A.
Lieutenant W. R. Dean, R.F.
Lieutenant A. F. Pullinger.
Lieutenant S. Pollard, B.A., R.F.A.
Captain G. Green.
Mr. H. W. Richmond, M.A., F.R.S.
Mr. W. Hartree, M.A., O.B.E.
Mr. C. E. Haselfoot, M.A.
Mr. W. E. Berwick, M.A.
Mr. J. G. Crowther.
Mr. R. H. Herman, M.A.
Mr. Gunston, M.A.

Computing Branch Headquarters, M.I.D.

Mr. Doodson.
Mr. Forster.
Mr. Wilson.
Mr. Irwin.
Miss Ellis.
Miss Legge.
Miss Mooney.
Miss Husbands.
Miss McMinn.
Miss Tibbs.
Miss Entwistle.
Miss Davin.
Miss Halstead.

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Rochford Sub-Station

Captain A. Ward, R.A.F.
Lieutenant W. Haythornthwaite.
Mr. C. Jakeman, M.A.

Stokes Bay Sub-Station

Lieutenant D. A. Macalister, R.G.A.

National Physical Laboratory

Mr. E. G. Gallop, M.A.
Mr. C. N. H. Lock, B.A.

University College

Mr. W. J. Goudie, B.Sc., M.I.M.E.
Mr. B. Lockspeiser, M.A.

Travelling Ballistic Party

Captain S. W. Hood, A.S.C.
Lieutenant H. K. Turner, M.C.
Lieutenant S. Brooker, R.G.A.

EXPERIMENTAL SECTION

Military Officers

Colonel C. A. F. Osmaston, C.B., R.M.A.
Lieutenant-Colonel S. H. Cowan, D.S.O., R.E.
Major T. H. Plummer, D.S.O., R.G.A.
Major A. L. Oke, R.G.A.
Captain O. Lyle, H.L.I.
Captain Dreydel, R.A.F.
Captain Lord Caledon
Captain J. B. Close
Captain Harrison, 3rd Queens
Captain A. G. Thomas, R.H.A.
Captain G. Lester, R.A.F. } G.H.Q. London

Captain G. B. Imrie
Lieutenant J. P. Castle } Claremont.

Captain Smith, A.S.C., Imber Court.

Captain R. E. Irving, Glou. Rgt.
Captain A. R. Manghall, R.E. } Chattenden.

Major C. A. Cleghorn
Captain A. S. Adams
Colonel C. L. Hervey
Captain L. Rottenburg
Major G. M. Thomson } attached for special inventions.

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APPENDIX III

MINISTRY OF MUNITIONS

MUNITIONS INVENTIONS DEPARTMENT

CLASSIFICATION OF INVENTIONS

Class A. Aeronautics

Sub-class		*Examiners*
A.1.	Aeroplanes	Mr. Dendy Marshall
A.2.	Airships	
A.3.	Balloons	
A.4.	Components	
A.5.	Fabrics	
A.X.	Miscellaneous	Mr. Ravenshear

Class B. Ordnance, Machine-guns, Small Arms, and Ammunition

B.1.	Accessories	Mr. Haycraft
B.2.	Anti-aircraft guns	Mr. Gibbens
B.3.	Breech mechanism	Mr. Haycraft
	Bomb-dropping, see B.17	
B.4*a*.	Bombs and incendiary darts	Mr. Gibbens
B.5*a*.	Bomb and grenade-throwers, mechanical	Mr. Barker
B.5*b*.	Bomb and grenade-throwers, explosive	Mr. Gibbens
B.6.	Cartridges	Mr. Barker
B.7.	Chain shot	Dr. Martin
B.8.	Fuses	
B.9.	Gun carriages and mountings	Mr. Haycraft
B.10.	Gun sights (except periscopic sights)	Mr. Bolton
B.11.	Machine-guns	Mr. Stack
B.12.	Mortars and howitzers	Mr. Haycraft.
B.13.	Revolvers and pistols	Mr. Haycraft
B.14.	Rifles and rifle sights	
B.15.	Rockets and star-shells	Dr. Martin
B.16.	Shells	
B.17.	Torpedoes, aerial and land, including discharging materials from aircraft	Mr. Gibbens
B.X.	Miscellaneous	Mr. Haycraft
B.X*a*.	Close fighting weapons	
B.X*b*.	Guns in general	

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Class C. Chemical Inventions

C.1.	Apparel and respirators	Mr. Barker
C.2.	Incendiary fluids, using and counteracting	
C.3.	Noxious chemicals and substance, using and counteracting	
C.X.	Miscellaneous	

Class D. Fortifications

D.1.	Armour; armoured cars	Mr. Taylor
D.2.	Bomb-catching apparatus	
D.3.	Entanglements	
D.4.	Entanglements, cutting, other than shells	
D.5.	Forts, portable	
D.6.	Intrenching tools	
D.7.	Mines	
D.8.	Shields, machine-gun and ordnance	
D.9.	Shields, infantry, and body armour	
D.10	Trench construction	
D.11.	Sandbags	
D.12.	Sapping and mining	
D.X.	Miscellaneous	

Class E. Field Service

E.1*a*.	Ambulance and medical services	Mr. Stack
E.1*b*.	Artificial limbs and surgical appliances	Mr. Robinson
E.2.	Bridging	Mr. Stack
E.3.	Clothing and boots	
E.4.	Commissariat	
E.5*a*.	Cooking and lighting	
E.5*b*.	Heating	Mr. Robinson
E.6.	Housing	Mr. Stack
E.7.	Hygiene	
E.8.	Ventilating	
E.9.	Water supply	
E.X.	Miscellaneous	

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Class F. Transport

F.1.	Cycles	Mr. Gibbens
F.2.	Harness and saddlery	
F.3.	Hauling, lifting, and winding tackle	
F.4.	Horse vehicles	
F.5.	Motor vehicles	
F.6.	Projectiles, carrying	
F.7.	Wagons, ammunition	
F.8.	Railways	
F.9.	Wheels and tyres	
F.X.	Miscellaneous	

Glass G. Electrical

G.1.	Dynamos, motors and batteries	Mr. Robinson
G.2.	Electrocution and like means of attack or defence	
G.3.	Searchlights and lamps	
G.X.	Miscellaneous	

Class H. Signalling

H.1.	Heliograph and lamp signalling	Mr. French
H.2.	Semaphores	Mr. Haycraft
H.3.	Sirens	
H.4.	Sounds, detecting and locating	Mr. French
H.5.	Telegraphs and telephones	Mr. Haycraft
H.6.	Wireless	
H.X.	Miscellaneous	

Class I. Philosophical Instruments

I.1.	Binoculars and telescopes	Mr. Whitwell
I.2.	Compasses	
I.3.	Field plotters	
I.4.	Periscopes, including periscopic sights	
I.5.	Range-finders and telemeters	
I.X.	Miscellaneous	

Class J. Machinery and Machine Tools

J.1.	Boilers	Mr. Ravenshear
J.2.	Engines	
J.3.	Machine tools	
J.4.	Metal-working processes	
J.5.	Pumps	
J.X.	Miscellaneous	

Class X. Miscellaneous . . . . Mr. Ormsby

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APPENDIX IV

THE COVENTRY ORDNANCE WORKS LIMITED

List of the Principal Armament Materials Manufactured during the First Great War

Largely due to Mr. Winston Churchill's foresight (see page 194).

NAVAL SERVICE

		Number
15 inch	Hydraulic mountings	23
	Guns	16
13·5 inch	Hydraulic mountings	10
	Hydraulic mountings, converted to pneumatic run out	33
	Guns	2
	Guns, repaired	10
12 inch	Guns, repaired	31
11 inch	Howitzer guns	66
	Howitzer mountings	55
10 inch	Bomb-thrower mountings	34
9·2-inch	Guns, repaired	12
6-inch	Guns	38
	Mountings	174
	Mountings, converted to 20° elevation	27
	Mountings, fitted with power gear	56
5·5-inch	Guns	58
	Guns, repaired	3
	Mountings	65
4·7-inch	Mountings, rebuilt	15
4-inch	Guns	346
	Mountings	377
	Mountings, converted to high-angle	8
	Mountings, triple	8
3-inch	Guns	504
6-pdr.	Guns, Hotchkiss, converted	35
	Mountings for searchlight projectors	111
	Torpedo-tubes, 18-inch for submarines	16

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LAND SERVICE

	Tanks	111
	Aeroplanes	710
15-inch	Howitzer guns	12
	Howitzer guns, repaired	1
	Howitzer mountings, platforms, etc., complete	12
12-inch	Howitzer guns	41
	Howitzer guns, repaired	9
	Howitzer mountings	31
	Howitzer mountings, repaired	1
	Land service mountings, built and fitted with naval guns	3
9·2-inch	Guns, repaired	2
8-inch	Howitzer guns	20
	Howitzer guns, converted from 6-inch	23
	Howitzer guns, repaired	32
	Howitzer carriages	23
	Howitzer carriages, repaired	1
	Howitzer firing platforms	150
6-inch	Guns	24
	Guns, repaired	63
	Howitzer guns	454
	Howitzer carriages	194
	Howitzer limbers	240
4·5-inch	Howitzer guns	2,323
	Howitzer guns, repaired	110
	Howitzer carriages	2,799
	Howitzer carriages, modified for 4-inch guns	18
	Howitzer carriages, repaired	293
	Howitzer limbers	4,695
	Howitzer wagons	3,433
4-inch	Howitzer guns	18
3-inch	Guns	87
	Mountings, high-angle	45
	Mountings for Stokes guns	4
18-pdr.	Mountings, high-angle	90
	Mountings, travelling platforms	65
75 m/m	Mountings, on turn-tables	17
	Mountings, anti-aircraft	13
	Mountings, mobile, on motor car	12
1½-pdr.	Anti-aircraft guns	92
303-inch	Tripod stand mountings	460

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Cartridge Cases:—	
4·5-inch	182,990
4-inch	3,056
3-inch	1,417
18-pdr.	181,332
12-pdr.	4,001
Fuses, Nos. 80, 82, 83, 94, etc., naval base fuses, etc.	7,240,000
Fuses, high explosive and Gaines	2,500,000
Fuse detonators and high explosive detonators	18,250,000
Tubes	7,000,000
Cartridge primers	2,000,000
Wagons and limbers, general service	1,311
Wheels, various	125,000
Guns and howitzers proved on Coventry Ordnance Works ranges and then examined and adjusted	4,210

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Index

A

Abdul Hamid, Sultan of Turkey, 21, 43, 44, 325
Abyssinia and Italy, 356
Achiwa, Mr. Nasheko, High Priest, 218
Adams, Capt. A. S., 380
Adams, Col. Sir H. Goold-, 301
Admiralty, Board of, responsibility of, 152
— consider Bacon letters, 133
— and Zeebrugge blocking, 289
Aeroplanes, first international meeting, 172
Agamemnon, H.M.S., armament of, 98
Ahmet II, queer reception of Ambassador, 45
Aiming light, use of, 269
Air Consultative Committee, 172
Airmen, German, funeral of, 263
Air purification in submarines, 56
Air Service, Naval, offered command of, 282
Airship, design of, 172
— mooring mast, 172
— destruction of, 174
Aix-la-Chapelle, visit to, 38, 39, 49
Albert, King of the Belgians, 318
Albright, Mr. G. S., 377
Alexander I, King of Servia, 38, 39, 49
Alexandra, Queen, 88, 158, 177
visits to *Dreadnought*, 158
Alford, George, 349 *n.*
Allanson, Col. Cecil, 333 *n.*
All Saints Church, 177
Amethyst, H.M.S., turbines, 95
Anderson, Mr. T. G., 161
Apollo, H.M.S., 290
Armament, mixed, disadvantage of, 98–100
Armstrong, Whitworth & Co., 177, 190, 193, 313
Art peculiarities, 29–30
Athens, visit to, 47
Athlone, Earl of, 343
Athos, Mount, visit to, 47

B

Backhouse, Admiral of the Fleet Sir Roger, 234
Bacon, Lady, 26
Bacon, Dudley, 26, 203
Bacon, Robin, 26
Bacon, Dorothy, 26, 154, 295
Bacon letters, 128–131
Balfour, Earl, offers me command of Naval Air Service, 282
Banff, landslide, 207
Barbier, Col., 343
Barker, Mr., examiner, 381
Barrage, Goodwins–Ruytingen, value of, 257
— superficial criticism of, 258, 259
Barrage Committee, 259, 293
Bath Chair Flotilla, 107
Battenberg, Admiral Prince Louis of, 96
Batteries, electric, accumulator gases generated, 60
— failure at sea, 71
— German, range of, 268
Battle-cruisers, armament of, 100, 101, 103
— German delay in building, 103
Battle ranges, 16
Beatty, Admiral of the Fleet Earl, 34, 337
Bedford, H.M.S., 96
Belgian coast blockade, 252
— patrol line, description of, 252–253
Belgrade, visit to, 38
Bell, Alexander Graham, 297

Digitized by Google

Benin Expedition, 13
— fever attack, 157
Bentinck, Admiral Sir Rudolf, 181
Beresford, Admiral Lord Charles, 54, 121 *et seq.*, 137, 142, 145
— Bacon letters, 128, 129, 130, 131
— Cabinet inquiry, 176
— charm of, 124, 127
— libel proceedings, 132
— plots against Admiralty, 175
— relations with Sir John Fisher, 122, 123, 175
— shadow Board of Admiralty, 176
Berwick, Mr. W. G., 379
Berwick, H.M.S., 96
Biles, Prof. Sir John, 94
Birching of boys, 370
Bird, Capt. Frederick, 238, 243
Bird, Maj.-Gen. Sir W. D., 361
Black Prince, H.M.S., 364
Blame, how to be borne, 140, 287
Blocking harbours, impossibility of, against submarines, 292
Bolton, Mr., examiner, 381
Bombardment of Zeebrugge, *1915–1916*, 265, 269, 270, 271
— Ostend, *1915–1916–1917*, 265, 266, 267
— system of, 266, 267, 269, 270
— difficulties attaching to, 270, 271
Boom, Admiralty, failure of, 255
Bould, Mr. J. H., 51 *n.*
Bousfield, Mr. W., 377
Bowen-Cooke, Mr. C. J., 377
Bowle-Evans, Commander S., 77
Bowles, Mr. T. Gibson, 95
Bowring, Admiral Humphrey, 234, 238
Bradford, Admiral Sir Edward, 345
Braishfield Lodge, tragedy concerning, 350
Brand, Admiral Hon. Sir Hubert, 221
Brennan, Mr., 304
Bribery, lady attempts, 313
Bridgeman, Admiral Sir Francis, 32, 158, 160, 176
— hoists flag in *Dreadnought*, 158
Briggs, Admiral Sir Charles, 147 *n.*
Britannia, H.M.S., 81
Broke, H.M.S., 257, 262, 274
Brooker, Lieut. S., 380
Broussa, visit to, 46
Brown, John, & Co., 177, 193
Brownrigg, Rear-Admiral Sir Douglas, Bart., 221
Bucharest, visit to, 41
Bulldog, H.M.S., blown up by crew, 106
Bulwark, H.M.S., 137, 142
Byng, Admiral, The Hon. John, 34

C

Cabinet inquiry *re* Beresford charge, 176
Cable, Capt. Frank T., 55, 63, 64
Caillard, Sir Vincent, 180
Caledon, Earl of, 380
Callendar, Prof. H. L., 377
Cambridge, H.M.S., error regarding command, 117
Cammell, Laird & Co., 177
Campbell-Bannerman, Sir Henry, 102
Canada, farming, 207
Carden, Admiral Sir Sackville, 123
Carol, King of Romania, 40, 49
Carpenter, Vice-Admiral A. F. B., V.C., gallant work of, 288
Carpenter, Mr. Charles G., 377
Carpmael, Mr. R. H., 198 *n.*, 202
Carter, Commander Norman, 267
Carter, Mr. W., 201 *n.*
Castle, Lieut. J. P., 380
Castlereagh, Viscount, 36
Casualties, economy desirable, 242
Chateau Yquem, 193
Cheshire, Prof. F. J., 377
Chloride Electric Storage Co., 61
Church, All Saints, 177
Churchill, Right Hon. Winston, 180, 236
— appoints me to Dover Command, 201
— appoints me to Inventions Department, 321
— as head of a department, 321
— at Admiralty, 320
— 15-inch howitzer order, 198, 199, 320
— appoints me to command, 201
— Premiership, 221, 222
— statesmanlike action *re* Coventry Ordnance, 194, 195
— tank, invention of, 308, 309, 310, 313

Digitized by Google

— trench bridging machine, 200
— *World Crisis*, 361
Churchill, Sub-Lieut., 75
Clarke, Major W. H., 302, 377
Clarke, Sir George Sydenham (*see* Sydenham of Combe)
Clear, Mr. J. P., 70
Cleghorn, Major C. A., 380
Close, Capt. J. B., 380
Coalition Government formed, 332
Coastal landing, 277
Coastal operations on Baltic discussed, 284
Cochrane, Mrs. Percy, 351
Colomb, Admiral Sir Philip, 33
Colossus, H.M.S., trials, 170
Collie, Prof. J. M., 377
Commander, R.N., duties of, 28
Commission of ships, length of, 108
Commission on manufacture of arms, 373
Committee on status of Engineer Officers, 146
Compasses, submarine, errors in, 58
Conqueror, H.M.S., turret mountings for, 192, 193
Constantinople, visit to, 43
Controllership of Navy accepted, 181
Cooper, Mr. W. R., 377
Cordite cases, re-design of, 170
— trouble with, 168
Coronel, Battle of, 365
Coventry Ordnance Works, 183
— *Conqueror*, gun mountings for, 192, 193
— directors, 201 *n.*
— financial position, 194
— fuses, War Office refuse trial order, 195
— — War Office request for, 195
— howitzers, 15-inch, design and manufacture, 196, 197
— inception of, 196
— interview with Mr. Churchill, 194
— become Managing Director, 182
— managers, 202
— manufactures during the Great War, Appendix IV
— Mulliner, Mr. H. H., Managing Director, 178
— resign from, 201
— test pieces, manipulation of, 191
Cowan, Lieut.-Col. S. H., 380
C.P.R., railway journey, 207
— railway, humours of travelling in, 208
Cradock, Rear-Admiral Sir C., 365
Crete massacres, 86
Crombie, Mr., 302
Cromie, Lieut., afterwards Capt., 74
Crompton, Col., 309
Cross-Channel transport of troops, 245
Crossley, Lieut.-Col. A. W., 378
Crowther, Mr. J. G., 379
Cruiser Squadron, high speed trials, 96
Culme-Seymour, Admiral Sir Michael, 160
Currey, Admiral Bernard, 161
Curve of Search Tactics, 146
Curzon, Marquis, 282
Curzon-Howe, Admiral the Hon. Sir Assheton, 144, 145

D

Dardanelles, passage down, 46
— Sir J. Fisher's inspection, 46
Darwin, Major Leonard, 378
Darwin, Sir Horace, 378
Davin, Miss, 379
Davis, Mr. John, 202
Dawson, Commander Sir Trevor, 56, 172
Dean, Lieut. W. R., 378
de Chair, Admiral Sir Dudley, 12, 13
D'Eyncourt, Sir E. Tennyson, 309, 310
Defence of harbours, defects of present system, 116
de Marliave, Admiral, 341
— hoists flag in action, 341, 342
de Martino, Commendatore E., 120
De Mistre, Miss Edith,
Dendy Marshall, Mr., examiner, 302–303
Destroyers, use of off Zeebrugge condemned, 273, 274, 275
Dick, Capt. J., 134
Dickinson, Mr. H. W., 378
Director of Naval Ordnance, appointed, 159
— cordite troubles, 168
— Coventry Ordnance Works, relations with, 178

Digitized by Google

— Fisher, Sir John, astuteness, 159
— firing trials, *Colossus*, 162
— — *Edinburgh*, 162
— — *Hero*, 162
Director of Naval Ordnance
— introduce 13·5-inch gun, 163
— — 18-inch torpedo, 166
— Naval Ordnance Stores, contracts taken over, 166
— Ordnance Committee, 167, 169
— — steel expert appointed, 167
— Pollen, Mr. A. H., trial of instruments, 165
— Woolwich Arsenal, relations with, 171
Discipline, essence of, 137
story anent, 138
Dobbie, Sir J., 378
Dobree, Mr. A., 378
Dockyards, reform of, 115
Donnan, Prof. F. G., 378
Doodson, Mr., 379
Dover Patrol, action of *Broke* and *Swift*, 257
— Admiralty boom, 255
— aiming light, use of, 269
— barrage, Goodwins–Ruytingen, laid, 257
— — superficial criticism of, 254, 258
— Belgian Coast Patrol, 252
— blocking harbours against submarines impossible, 292
— bombardment of Ostend, *1915–1916–1917*, 265, 267
— — of Zeebrugge, *1915*, 265, 269
— coastal landing, 277
— Sir D. Haig's decision *re*, 277, 278
— destroyers, 6th Flotilla routine, 251
— functions of, 244 *et seq.*
— funeral of German airmen, 263
— give up command, 294
— Haig, Sir D., request to keep troops in Belgium, 279
— minefield wall proposed, 255
— Ostend, proposals to block, 276
— — failure of attempt to block, 292
— position of Admiral at night, 247
— Prime Minister kept outside Dover, 282
— raids, difficulty of frustrating, 247
— saving enemy crews, 263
— servants, War bonus to, 295
— smallness of force available, 250
— smoke screen, 268
— submarines, enemy, difficulty of stopping, 251
— take command of, 235
— Tirpitz battery, 266, 343
— traffic protection, 245, 248
— — losses, 249
— wall minefield, 256, 259, 260, 274, 292
— wall minefield, lightships refused, 260, 292
— work of Admiral severe, 281
Drake, H.M.S., 96
Draga, Queen of Servia, 38, 39, 49
Dreadnought, H.M.S., 11
— design of, 94
— design committee, 94
— comparison with German battleship, 153
— construction of, 148
— cruise to Aranci Bay, 155
— — to Trinidad, 156
— flooding compartments, 153
— joins Reserve Fleet, 111, 158
— inspected by King Edward VII, 158
— loses rudder plating, 157
— rudders, balanced, description of, 151
— steering defects, 151
— stuck in entrance of dock, 149
— time of construction, 149
— turbine, defect in design, 151
— visit to Trinidad, 156
Dreydel, Capt. R., 380
Dreyer, Admiral Sir Frederick, 155, 161, 163, 367
Duckham, Sir Arthur, 378
Duff, Admiral Sir A. Ludovic, 259
Dunston, Sir Wyndham, 56
Durston, Sir John, 53

E

E.52 submarine, sinks U-boat, 257
Eardley-Wilmot, Rear-Admiral Sir Sydney, 162
Edison, Mr. T. A., 297
Education, naval, old system, 81
— new system, 85
Edward VII, King, 11, 37, 88, 115, 128, 129, 155, 158

Digitized by Google

Eldridge, Commander G. B., 255
Elia, Conte, 257
Elizabeth, Queen of the Belgians, 41, 319
Elizabeth, Queen of England, 41
Elizabeth, Queen of Romania, 40, 41, 49
Elizabeth, Queen, Tudor, 41
Ellis, Sir Charles, 105, 181, 182, 194, 201
Ellis, Engineer-Capt. E. F., 161
Ellis, Miss, 379
Embury, Col. Robinson, 191, 202
Empress of Asia, 208
Empress of India, H.M.S., 24, 28, 137
— boats' crews, 24
Engines, submarine boats', 59
— petrol, danger of, 59
— petrol, 600 h.p., troubles with, 68
Engineer Officers, old type, 83, 84
Entry of Officers, old system, 80
Entwistle, Miss, 379
Erebus, H.M.S., 271
Errors in wording, queer cases, 117
Essex, H.M.S., 96
Evans, Commander, 157
Evans, Admiral Sir E. R. G. R., 5, 238, 274, 288
Evans, Lieut. S. Bowle-, 77, 377
Exhibition, French, visited, 1900, 29
Explosion, effect, how minimized, 60
— *poudre B*, French battleship, 60

F

Fairfield Shipbuilding Co., 98, 177
Faraday, Michael, 298
Farmer, Mr. R. C., 378
Fascism, 352, 355
Ferdinand, Prince of Romania, 42
Ferranti, Mr. S. Z. de, 378
Fighting formation, 31, 32
— instructions, 33
Finance of manufacture, 186
Firing trials, *Colossus*, 162
— *Edinburgh*, 162
— *Hero*, 162
Firth, Mr. Bernard, 201
Fisher, Admiral of the Fleet Lord, 11, 13, 14, 17, 23, 24, 32, 37, 79, 84, 90, 124
— Abdul Hamid, Sultan, 325
— astuteness, 159
— at Sandringham, 37
— Bacon letters, 127, 128
— Beresford, Lord Charles, relations with, 122, 123, 131
— Cabinet inquiry, 176, 177
— comparison with Nelson, 322
— Dardanelles, inspection of, 46, 47
— defence of harbours, 115
— design committee, 94
— Falklands Islands, Battle of, 328
— firmness *re Dreadnought* design, 102
— general impression of, 91
— gun, 13·5-inch, introduction, 163
— Hague Peace Conference, 327
— humanizing war, 327
— indiscretions of, 130
— institutes reform, 105
— Ivolsky, Mr., letter to, 324
— Kiamil Pasha, 47
— King Edward VII, 114
— Life written, 366
— "Memoirs," remark concerning, 366
— memorandum *re* reforms, 93
— naval education scheme, 79
— Naval Ordnance Stores, 166
— Queen Alexandra, 177
— Queen Victoria, 114
— repartees, 114, 115, 120
— reform of dockyards, 115
— Sir A. Wilson, promotion of, 346
— telegram to subordinate, 110
Flogging, necessity for, 370
Foch, Marshal, visit to, 329
— coast defences, 330
Foote, Admiral Randolph, 164
Formidable, H.M.S., 141
Forster, Mr., 379
Foster, Lieut. Arnold-, 377
Foster, Lieut., 200
Fowler, Capt. R. H., 379
Fox, H.M.S., 168
Franz Josef, Emperor, 37, 49
French, Viscount, F. M. (Earl of Ypres), 330
Fujita, interpreter, 213
— War Office request for on outbreak of war, 195
Funeral of German airmen, criticisms anent, 263
Fuses, trial order refused, 195

Digitized by Google

G

Gallop, Mr. E. G., 370
Gard, Mr. W. H., 98, 148
Garvin, Mr. J. L., 91
Gask, Paymaster Rear-Admiral Walter, 238
Gayer, Kapitän A., 258
Geddes, Sir Eric, 240, 259, 261, 293, 294
George I, King of Greece, 47, 49, 128
George V, King of England, 128, 129, 317
German methods of trade, 194
Ghost story, 204
Gibbens, Mr., examiner, 381
Glazebrook, Sir R. T., 172, 378
Gold, sweated, 29
Good service pension awarded, 295
Goudie, Mr. W. J., 380
Government, totalitarian, 21
Gracie, Sir Alexander, 94, 98, 201
Gray, Prof. Andrew, 378
Great Betrayal, The, book, 132
Green, Capt. G., 379
Greenhill, Sir Alfred, 172, 378
Grubb, Sir Howard, 56
Gun, 13·5-inch, introduced, 163
Gunner, R.N., and pills, 104
Gunnery, long-range firing, 99
Gunston, Mr., 379

H

Hadden, Maj.-Gen. Sir Charles, 167, 172
Hadfield, Sir Robert, Bart., 378
Haig, Field-Marshal Earl, 332
— coastal landing, 277
— request from, to keep units in Belgium, 279
— tanks, visit to, 333
Haldane, Prof. J. S., 56, 378
Halstead, Miss, 379
Hampshire, H.M.S., loss of, 340
Handley, Capt., 201
Harding, Col. E. W., R.M.A., 161
Harmar, Mr. Oscar, 365
Harrison, Capt., 380
Hart, Capt. H. Dyke, 22
Hartree, Lieut. D., 379
Hartree, Mr. W., 379
Haselfoot, Mr. C. E., 379
Hats worn by Japanese, 224
Hawkins, Lieut. A., 379
Haycraft, Mr., 381
Haythornthwaite, Lieut. W., 380
Hazard, H.M.S., 63, 65, 66, 70, 71
Heap, Mr. D. T., 378
Heffernan, Col., 378
Hell, 264
Henderson, Capt. Arnot, 243
Herbert, Sir Alfred, 189
Herman, Mr. R., 379
Hervey, Col. C., 380
Hichens, Mr. W. L., 194, 201
High explosive shell *v.* shrapnel, 331
Hill, Prof. A. V., 302, 379
Holidays for workmen, 190
Holland submarine, 50
— engine troubles, 68
— first submerging, 63
— troubles with, 64, 65, 67
— wrong plans supplied, 62
Hood, Capt. S., 380
Hood, Rear-Admiral the Hon. H., 244, 251
Hot water at Sandringham, 37
Hotham, Col. John, 36
Howard, Capt. W. Vansittart, 243
Howitzers, 15-inch, description of, 196, 197
— Admiralty accept, 198
— design of, 197
— firing test, 199
— take two to France, 235
— trials in France, 236
— War Office refuse, 198
— 18-inch, muddle of design, 312, 313
Hughes, Right Hon. W. M., 120
Hunter-Weston, General Sir Aylmer, 276
Huntington, Prof. A. K., 378
Hurd, Sir Archibald, 366
Husbands, Miss, 379
Hybia Gardens, 224

I

Imrie, Capt. G. B., 380
Inventions Department, financial arrangements, 299
— lady attempts bribery, 313

Digitized by Google

— member of Council meddling, danger of, 311
— method of dealing with inventors, 301
— organization, 299, 300
— relations with Army in France, 314
Inventions, advisory panel, 300, 377
— method of dealing with, 300
— parthenogenetic shell, 305
— perpetual motion, 306
— some absurd, 304
— time taken to develop, 298
Irresistible, H.M.S., 133, 137, 138, 139, 141
Irving, Capt. R. E., 380
Irwin, Mr., 379
Italy and Abyssinia, 356
— build a house, 351
— corporation system, 355
— Fascism, 352, 355
— *Risorgimento*, 352
— story *re* customs, 43

J

Jackson, Admiral of the Fleet Sir H., 256
Jackson, Brig.-Gen., 378
Jackson, Lady (Henry), 157
Jacobs, Mr. W. W., 88
Jakeman, Mr. C., 377
Japan, visit to, 205
— Admiralty officer entertained, 224, 225
— bargaining at Nikko, 219
— customs regarding hats, 224
— help afforded by me, *1904*, 208
— information given *re* cordite, 209
— *saké*, ceremony in drinking, 215, 216
— scenery, 209, 210, 218
— theatre, Tokyo, 211, 212
Jellicoe, Admiral of the Fleet Earl, 12, 13, 14, 34, 39, 137, 159, 161, 254, 272, 366
— Admiral Sir H. Evan-Thomas, 338
— and Lord Beatty, 337
— and Mr. Churchill, 338
— and Mr. Lloyd George, 335, 336
— anti-submarine campaign, 334
— characteristics, 334
— confidence in, 336
— his death, 338
— his support at Dover, 336
— leaves Admiralty, 336
— my connection with at Dover, 254, 261, 336
— naval inspection corps, 167
— remarks on Barrage Committee, 261
— self-control, 336
Johnson, Commodore Charles, 243
Jutland, Battle of, 362, 363
— uselessness of armoured cruisers at, 364
Jutland Scandal, 360

K

Kaiser class battleship, speed of, 94
Kaiser Wilhelm II, 21
Keigwin, Lieut. R., 344
Kelvin, Lord, 94
Kennedy, Sir A., 378
Kerr, Admiral of the Fleet Lord Walter, 72
Keyes, Admiral of the Fleet Sir Roger, Bart., 283
Kiamil Pasha, 47
King Alexander of Servia, 38, 39, 49
King Carol of Romania, 40, 49
King Edward VII, 11, 37, 88, 115, 128, 129, 158
— trip in *Dreadnought*, 158
King George I of Greece, 47, 49, 128
King George V of England, 128, 129
— crosses the Channel, 317
— Gartside-Tippinge, Lieut.-Com., presentation of, 318
— visit to Dover, 317
Kingship, dangers of, 49
Kitchener, Field-Marshal Earl, 201
— at Cabinet Committee, 338
— death of, 340
— expenditure of ammunition, 200, 339
Knight, F. C., P.O., I.C.L., 77, 377
König class battleship, speed of, 94
König Albert, 362
Korea, arrive in, 225
— ladies, varied colour in dress, 225
— peculiar custom of walking, 225
Kremlin, visit to, 229
Kure, visit to, 212
— dinner at, 212

Digitized by Google

L

Lacey, Mr. E., 301
Lake submarine, 50
Lamb, Capt. W., 239
Lambert, S. D., 239
Lambton, Rear-Admiral the Hon. Hedworth, 125, 128, 129, 130, 132
— *versus* Curzon-Howe in manœuvres, 143
— my suggestion acted on, 144
— an adventurous night, 144, 145
Lanchester, Mr. F. W., 172, 378
Lankester, Mr. A., 379
Laurie, Prof., 302, 379
Lees, Commander Edgar, 77
Legge, Miss, 379
Lester, Capt. G., 380
Lisbon, visit to, 194
Little, Admiral Sir Charles, 77
Lloyd George, Right Hon. David, 335, 338
Lockspeiser, Mr. B., 380
Lock, Mr. C., 380
Login, Admiral Spencer, 147 *n.*
Longridge, Mr. Michael, 378
Lord Clive, H.M.S., 267
Lord Nelson, armament of, 98
Lorna Doone, book, 298
Lorne, Marquis of, 298
Loudon, Mr., and Duke of Wellington, 117
Louise, Princess, H.R.H., 298
Lowry, Commander Arthur, 22
Lumsden, Brig-Gen., V.C., 237
Lyle, Capt. O., 380

M

Macalister, Lieut. D. A., 380
Macartney, Mr. Walter, 202
McFarlane, Mr. L., 61 *n.*
McGregor, Commander Sir Malcolm, 161
McKechnie, Sir James, 51 *n.*
McKenna, Right Hon. Reginald, 165, 172, 179, 182
McMurtrie, Mr. Francis, 5
McMinn, Miss, 379
Madden, Admiral of the Fleet Sir Charles, 340
Magistrates, remarks on, 367
— Chairman of Bench, 368
— bastardy case, 370
— Clerk, duties of, 371
— and drink, 372
— infliction of fines, 369
— and motorists, 369
Mahan, Rear-Admiral A. T., U.S.N., 17, 33
Makarov, Admiral, 111
Mallock, Mr. W., 172
Malta Harbour, adventures in, 141, 142, 143
Manège at Vienna, 38
Manghall, Capt. A. R., 380
Manœuvres, Mediterranean and Atlantic Fleets, 143, 144
Mansell, Col. Sir John, 201, 202
Mansergh, Lieut., 75
Manufacture, finance of, 185
Manufacture of arms, commission on, 373
Marie, Princess of Romania, 42
Mark Twain, 297
Marlborough, H.M.S., 84
Marshal Soult, 271
Marshall, Mr. Dendy, 302–303
Martin, Dr., 379
Mathews, Admiral, 33
Maurice, General Sir F., 361
Maw, Mr. W. H., 378
Maxim gun mounting, trial of, 311, 312
May, Rear-Admiral H. J., 30, 32
May, Admiral of the Fleet Sir W., 69
Maybrick Trial, 373
Mayes, Lieut. C., 379
Merchant liners, subsidized, 100
Meux, Admiral of the Fleet the Hon. Sir Hedworth (*see* Lambton)
Mice, white, use of, in submarines, 57
Midshipman and sporting gun, 134
Milne, Lieut. E. A., 379
Minefield wall, 259, 260, 262
— — laid, 274
— — lightships refused, 260, 292
— — originally proposed, 256
— — proposed for North Sea, 256
Mines, blockade, failure of, 166
— visit to Genoa, 256
Ministry of Munitions, appointment to, 321
— shadow suggested, 373
Minorca, Battle of, 33
Mitchell, Sir Thomas, 148

Digitized by Google

Miyajima, visit to, 217
Moir, Sir Ernest, Bart., 378
Monte Carlo, gambling at, 357
Mooney, Miss, 379
Moreton, Capt. J., 68, 77, 141, 377
Moore, Major A. E., 302
Moscow, visit to, 229
Motor Car and How it Works, The, 367
Moulton, Lord, 308
Muirhead, William, E.R.A., 77, 377
Mukden, visit to, 225
Mulliner, Mr. H. H., 178
— trouble with Cabinet, 178, 179, 180
— and wheel-spokes, 190
Murakami, Admiral, 212
Mussolini, Signor, 353, 354, 357
My Mother, 114

N

Nautilus, submarine, 53
Naval officer, advice to his son, 163
Naval Ordnance Stores, control of, 166
Naval Scrap-book written, 367
National Scientific Centre proposed, 315
Nesfield, Mr., 309
Neuve Chapelle, Battle of, 236
Neville, P.O., Ist class, 377
Nicholson, Admiral Stuart, 161
Nicholson, Sir W. F., 118
Nikko, visit to, 218
Noble, Sir Andrew, 190
Noel, Admiral of the Fleet Sir Gerard, 23, 33, 86
Norbury, Capt. H. R., 161
Norman, Major Sir Henry, 378
Northcliffe, Viscount, 332

O

Officers, naval, various classes, 83
— Engineer, old style, 83
Ogilvie, Major F. G., 378
Oguri, Admiral, 208, 209
Oke, Major A. L., 380
Oliver, Admiral of the Fleet Sir H., 274, 279
Oman, Sir Charles, 361
Operations, useless, stupidity of, 243
— method of checking position, 290
Ordnance Committee, 167, 311, 312
Organist and blower, 85
Osaka, monument to horses, 224
Osmaston, Col. C. A. F., 301, 380
Ostend, blocking proposal, *1916*, 276
— bombardment, *1915*, 265, 266, 267
— — *1916*, 268
— — *1917*, 269
— failure of attempt to block, 292
Ottawa, visit to, 207

P

Paget, Capt. (afterwards Admiral Sir Alfred), parachute adventure, 135
Parsons, Sir Charles, 94
Parsons, Engineer-Captain, 243
Peck, Capt. Ambrose, 274
Pegasus, H.M.S., loss of, 106
Pekin, visit to, 226
— curry story, 223
— lunch at, 226
Periscope, first made, 54
Petavel, Prof. J. E., 172
Petrol, danger of explosion, 59
Petropavlovsk, sinking of, 111
Phillips, Lieut.-Com. P. E., 257
Plagiarism, unintentional extraordinary, 365
Plans, War, preparation of, 285, 287
Platea, story *re* channel, 136
Pluck, British and foreign, 16
Plummer, Major T. H., 380
Pollard, Lieut. S., 379
Politeness, Japanese, 210, 211
Pollen, Mr. A. H., 168
Position of Admiral at night, 247
Press campaign against Lord Jellicoe, 336
Preston, Sir Frederic, 204
Prime Minister, kept outside Dover, 282
Prince of Wales (George V), 128, 129
Princess Royal, H.M.S., 364
Profit sharing, 188
Promotion in Navy, difficulties attending, 27

Digitized by Google

Puleston, Mrs. Crawshay, 203, 205
Pullinger, Lieut. A. F., 379

Q

Quebec, visit to, 206
Queen Draga of Servia, 39
Queen Elizabeth of Belgium, 41, 319
Queen Elizabeth of England, 41
Queen Elizabeth of Romania, 40
Queen Elizabeth, Tudor, 41
Queen Victoria, 114
Quicke, Commander A. H., 77
Quick-firing guns, divergent views concerning, 331

R

Ravenshear, Mr. 381
Rawlinson, General Sir H., 277, 278
Rayleigh, Lord, 172
Redpath, Mr. R., 199, 202, 276, 378
Rees, Joseph, P.O., 1st class, 77, 377
Renown, H.M.S., 100
Repartees, Sir John Fisher, 120
Repington, Col. A'Court, 180
Repulse, H.M.S., 100
Reserve Fleet, formation of, 111
Revenge, H.M.S., explosion in, 168
Richmond, Admiral Sir H., 23
Richmond, Mr. H. W., 379
Riviera, H.M.S., 269
Roberts, Dean Page, 92
Robertson, Mr. Charles, 70
Robinson, Mr., 382
Robinson, Dean Armitage, 92
Robinson, W. J., E.R.A., 77
Rodjestvenski, Admiral, 106
Rolls, Hon. Charles, 174
Ronarc'h, Admiral, 342
Rottenburgh, Capt. L., 380
Rouquerol, General, 343
— Tirpitz shelling, 344
Royal Navy, progress of, 15, 16
Rudders, balanced, description of, 151
Rudolf, Archduke, 37
Russell, Mr. E. J., 378
Russell, Lord John, 88
Russo-Japanese War, attack on trawlers, 106
— strategy of, 111

S

St. Petersburg, visit to, 230
St. Vincent, H.M.S., failure of gun, 162
Saito, Admiral Viscount, 225
Saké, ceremony of drinking, 215, 216
Salisbury, Marquis of, 325
Sasamoto, curio dealer, 219
Saving enemy crews, 262, 263
Scarlet Pimpernel, 297
Scott, Admiral Sir Percy, 14, 155
Scott-Moncrieff, Maj.-Gen. Sir G., 378
Scrapping inefficient ships, 106
Secrecy regarding plans, difficulties of, 280, 281
S. D. Lambert, S.S., 239
Selamlik at Constantinople, 43
Self-training of officers, 288
Selborne, Earl of, 94
Selby, Mr. F., 172
Shaw, Sir W. N., 172
Shell for 15-inch howitzer, manufacture of, 203
Shimonoseki, visit to, 225
Shooting on coast of Greece, 133, 135
— in Hampshire, 349
Siberia, passage through, 228
Simple Guide to Wireless, book, 367
Smith, Capt., 380
Smith, Mr. T. B., 189
Smith, Mr. D. Bonner-, 5
Smith-Dorrien, General Sir H., 236
Smoke screen, 268
Snell, Sir John, 378
Somers, Messrs., of Halesowen, 203
Soveral, Marquis de, 88
Speech at Cutlers' Feast, 181
— at Naval Society dinner, 180
Spence, Engineer-Captain Robert, 77, 377
Spencer, Col., 302
Stack, Mr., 382
Staff college, lecture at, 278
Steering defects in *Dreadnought*, 151
Stoker warrant officer class formed, 112
— entry of Hercules, 113
Stokes, Sir F. W., 378
Stokes trench mortar, 308
Strutt, Prof. the Hon. R., 378

Digitized by Google

Sturdee, Admiral Sir D., 125 *n.*
Submarine A.1, raising operations, 75
— troubles at sea, 71
Submarines, B class, description of, 72
Submarines
— detection by W/T, 272, 273
— difficulties with foreseen, 54
— Holland, first submerging, 63
— manœuvres with, 65, 74
— refusal of First Lord to mount gun in, 72
— secret patents for, 73
— wrong plans supplied, 62
Sueter, Rear-Admiral Sir Murray, 77, 308
Supernatural stories, 203, 204
Swift, H.M.S., 257, 274
Swinburne, Mr. J., 378
Surtees, Mr. Henry, 26
Sydenham of Combe, Lord, 102
Synge, Mr. W. R., 36

T

Tact, examples of want of, 88
Tactical Board, use of, 32
Tactics, war, absence of in 1900, 23
Tank, committee *re* invention of, 309
Tanks, asked to visit, 333
Taylor, Mr., 382
Terney, Mr. A., 61 *n.*
Terror, H.M.S., 271
Thetis, submarine, how loss could have been prevented, 62
— raising of, 76
Thomas, Capt. A. G., 380
Thomson, Major G., 380
Thomson, Prof. Sir J. J., 378
Thornycroft, Sir John, 59
Threlfall, Sir Richard, 268, 378
Tibbs, Miss, 379
Time and distance factors in strategy, 246
Tippinge, Gartside-, Lieut.-Com., 318
Tirpitz battery, attack by, 267
Titanic, loss of, 206
Torpedo boat, loss of, court-martial, 138
Torpedo, 18-inch, introduction of, 166
Trade, German method of, 193
Trades Union, 184, 189
Traffic, Channel, arrangements of, 248
— losses in, 292
Trench-crossing tractor, 200
Tressider, Capt., 201
Trials, cordite on board *Colossus*, 169
Tritton, Sir William, 200, 201, 309, 310
Troy, visit to, 46
Tryon, Vice-Admiral Sir George, 67, 136
Tudor, Admiral Sir F., 161
Tulloch, Major T. G., 378
Turbine, machinery, description of, 96
— in *Dreadnought*, 150
Turkish customs incident, 42
Turner, Lieut. H., 380
Tweedmouth, Lord, 179
Tyrwhitt, Capt. Hon. Hugh, 147 *n.*, 149
— appointed Commodore, 121, 128
Tyrwhitt, Admiral of the Fleet Sir R., 12, 13

U

Utopia, loss of, 246

V

Vancouver, visit to, 208
Versailles, meeting at, 13
Vickers, Sons & Maxim, 51, 56, 61, 63, 70, 164, 177
— action regarding patents, 72, 73
— construct airship, 172
Victor Emmanuel II, 352
Victor Emmanuel III, 352
Victoria, British Columbia, visit to, 208
Victoria, Queen, 114
Vienna, Court etiquette, 38
Vindictive, H.M.S., 288
Von Pelken, Korvettenkapitän Graf, 267 *n.*

W

Waller, P.O., 1st class, 77, 377
Walter, Mr. A. J., 378

Digitized by Google

War course, 30
War, outbreak of, 195
War plans, preparation of, 285, 287
Ward, Capt. A., 380
Warrant Officer, economy of, 104
Warrior, H.M.S., 364
Weston, General Sir A. Hunter-, 276
White, Sir William, 53, 181
Wilhelm II, Emperor of Germany, 21
Williams, H. P., 161
Wilson, Major, 201, 309, 310
Wilson, Mr., 379
Wilson, Admiral of the Fleet Sir Arthur, 50 65, 111, 276
— submarine manœuvres with, 73, 74
— manœuvres, Atlantic Fleet, 146
— promoted to Admiral of the Fleet, 346
— proposal *re* submarine crews, 50
— refuses peerage, 346
Wilson, Mr. C. J., 378
Wireless, directional, use of in hunting submarines, 272, 273
Wolseley, Field-Marshal Viscount, 36, 47, 48
Wolseley Motor Car Works design submarine engine, 61, 68
Woolwich Arsenal, relations with, 171
— post-war committee, 171
Women's work at Dover, 295
Workmen, representation on Board of Directors, 189
— holidays for, 190
Work of Admiral severe, 281
World Crisis, book criticized, 361
Wren, Lieut. T. L., 379

Y

Yellow fever, 157
Yokohama, reception at, 208
Young, Mr. Filson, 359, 360, 361

Z

Zeebrugge, my proposal *re* mole landing, 283
— locks fired at, 271
— Admiralty scheme, 283
— blocking, failure of, 284
— quoted in advocacy of Baltic landing, 284
— *Vindictive* at, 288
— gallantry of personnel, 289, 290

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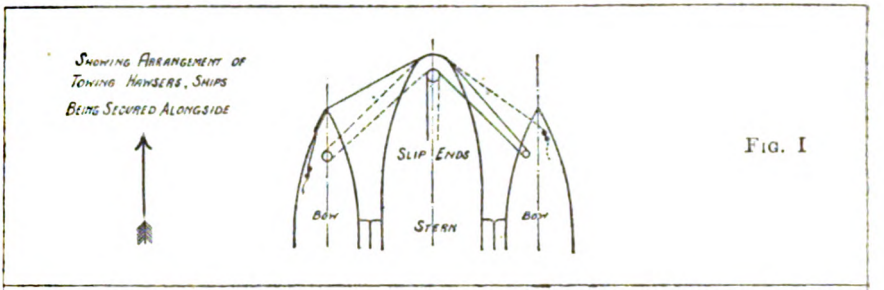

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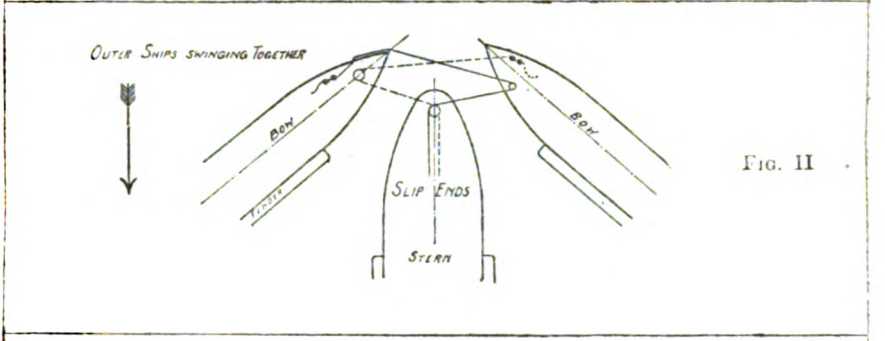

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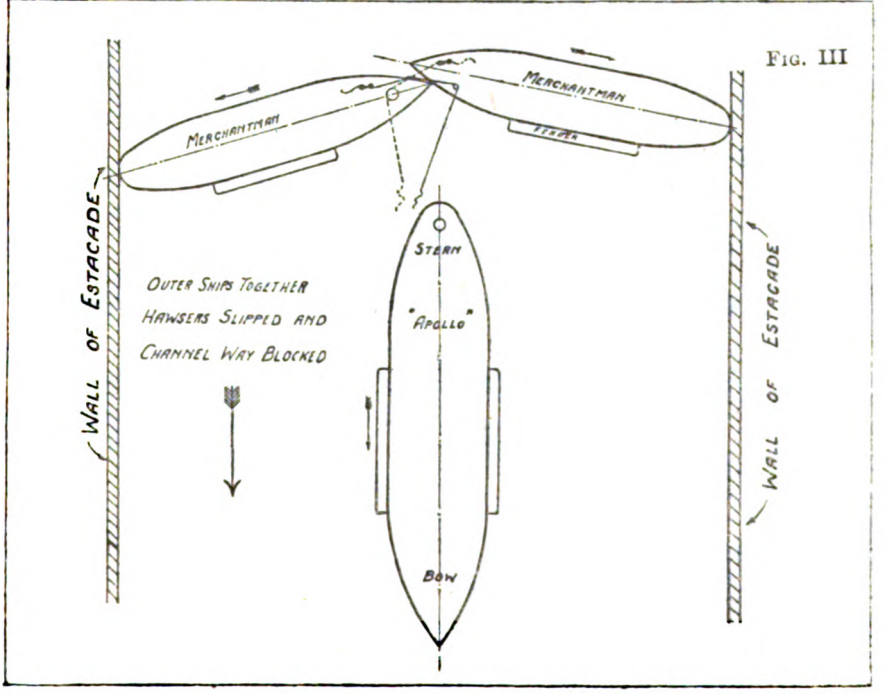

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See page 290

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CONTENTS

	PAGE
Important Royal Biographies	2
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Illustrated Library of Modern Knowledge	10, 11
Miscellaneous	12, 13
Illustrated Books of Humour	14, 15
Technical and Scientific	16-20
Recent Successful General Books	21
Royal Books	22
Gift Books	23, 24

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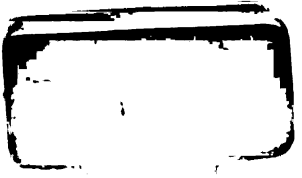

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